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INTRODUCTION

Each individual in a society has distinct characteristics that can constitute an advantage or disadvantage in their environment. These innate or acquired characteristics may also be used as a basis for discrimination in an individual's professional or social life. Discrimination in health institutions, which often employ large and diverse groups of people, is a global problem that nurses frequently encounter.

Nurses may face both social discrimination from the community and workplace discrimination from patients, their relatives, doctors, other health care professionals, and even their own colleagues (1). Discriminatory behaviors occur in nursing for many reasons. For example, the traditional sexist approach, which dictates that caring is the responsibility of women alone, leads to the division of medicine as a man's job and nursing as a woman's job within the health professions (2,3). This

Development and psychometric analysis of the nurses' perceptions of the discrimination scale

Abstract

Aim: This study aimed to develop the Nurses' Perceptions of Discrimination Scale (NPDS) and evaluate its reliability and validity.

Materials and Methods: The study included a convenience sample of 352 nurses working in hospitals on the European side of Istanbul. Data were collected between December 2020 and April 2021 using a personal information form and the NPDS, both of which were prepared and developed by the researcher. Validity analyses consisted of content validation with the Lewis technique and construct validation by explanatory and confirmatory factor analysis. Reliability analyses consisted of Cronbach's alpha and item-total correlation analysis. Kruskal-Wallis and Mann-Whitney U tests were used to determine the significance of relationships between scale scores and individual characteristics. Analyses were performed with IBM SPSS 26 (Statistical Package for the Social Sciences) statistical package program.

Results: Factor analysis revealed a four-factor structure (Personal Preferences and Individual Characteristics, Kinship and Closeness, Nurse Individual and Professional Characteristics, and Patient and Disease Characteristics) explaining 52.97% of the total variance. The content validity index for the scale items was 0.96-1.00, factor loadings were 0.49-0.80, and internal consistency coefficients for the subscales were 0.66-0.92. The Cronbach's alpha value of the scale was 0.89. NPDS total and subscale scores differed significantly according to the nurses' institution, unit, and years of professional experience.

Conclusion: The final NPDS consists of 30 items answered on a 5-point Likert-type scale. The total score is obtained as the average item score and ranges from 30 to 150, with higher scores indicating higher perceived discrimination. Perceptions of discrimination varied according to certain work-related variables. The NPDS can be used to evaluate nurses' perceptions of discrimination.

Keywords: Discrimination, perception, nurses, workplace, scale

stereotype has been the subject of many studies (4) and can cause problems for male nurses, such as gender-based discrimination (5). Similarly, the fact that society characterizes nurses as doctors' assistants, people who measure blood pressure and give injections, and that physicians regard nurses as a professional group dependent on them can form the basis of discriminatory behaviors by physicians and other health care professionals against nurses (6,7). Therefore, the image that society and health care professionals form of the nursing profession can bring about the risk of discrimination.

Apart from the social image of nurses, the late standardization of nursing education resulted in many health care professionals working under this identity even though they are not nurses. This diversity in practice has led nurses to exhibit various discriminatory behaviors among themselves. In one study, continuous emphasis in the workplace on characteristics such as seniority (senior or junior staff), recruitment (contract or

permanent staff), and qualifications (high school or university graduates) among employees with the title of nurse can be considered an indicator of discrimination against one another (8). There are also studies in the literature that mention other potential sources of discrimination between nurses, such as being married vs. single or having children vs. being childless, and having newly started on the job or knowing the head nurse (9,10).

Another issue that needs to be addressed is the discriminatory behaviors of nurses towards patients. There are reports of discrimination against patients for reasons such as age, sexual orientation, presence of infectious disease, race, religion, and beliefs (11-13). In short, the literature indicates that nurses engage in various discriminatory behaviors in addition to being discriminated against.

It has been noted that the phenomenon of discrimination should not be attributed solely to bad intentions, and that a person's behavior can be perceived as discriminatory even if they do not intend to discriminate in their professional life (8). In this context, identifying which behaviors nurses perceive as discriminatory is important for identifying and resolving discrimination practices both in patient care and in the workplace. Although there are various measures of perceived discrimination in the health field, there is no assessment tool that directly measures perceptions of discrimination among nurses. There is a need for a valid and reliable measurement tool to evaluate discrimination in patient care and the workplace experienced by nurses. This study aimed to develop a valid and reliable measurement tool to determine nurses' perceptions of discrimination.

MATERIALS AND METHODS

Study Design

This methodological, descriptive, correlational study was conducted to develop and evaluate the psychometric properties of the Nurses' Perceptions of Discrimination Scale (NPDS).

Study Setting

The study was conducted in hospitals with different characteristics located in the European part of the Istanbul province. A high-capacity medical school hospital in the Istanbul province was included as a public university hospital, and two group-A internationally accredited hospitals affiliated with the same group were included as private university hospitals.

Study Sample

When determining the size of the study sample, we followed the recommendation for scale development studies to include a number of participants at least 5 times and ideally 10 times the number of items in the scale (14). Based on a calculation of at least 10 nurses per item in the draft scale ($34 \times 10 = 340$), the minimum sample size was determined to be 340 and the study was conducted with 352 nurses ($N=352$). The inclusion criteria were that the nurses had completed the orientation process in

their institutions and volunteered to participate in the study.

Data Collection

After obtaining written permission to conduct the study from the managers of the participating institutions, the researcher administered the data collection tools to the participating nurses. The data collection tools consisted of a personal information form including variables that may influence perceptions of discrimination (e.g., age, gender, education level, institution, duration of employment in the institution, unit, years of professional experience, and working hours) and the final version of the NPDS. The scale development process consisted of three stages.

Stage 1: Content Analysis and Item Generation

The literature states that in identifying expressions to constitute the content of a scale, an item pool can be created by examining previously developed scales related to the subject (14,15). We used studies on student perceptions of discrimination (16), studies addressing professional discrimination (17-21) and studies addressing discrimination specifically in the field of health (11,13) to create the scale items. An item bank was created with statements covering the discriminatory behaviors encountered by nurses in the workplace and during patient care. Items were selected from this pool and a draft version of the scale consisting of 36 questions was prepared. Care was taken to select statements for the draft scale that were clear and non-ambiguous. Response options were given on a 5-point Likert-type scale to measure the degree to which the statements were perceived as discrimination (1=Absolutely not discrimination, 2=Partially discrimination, 3=Not sure, 4=Large discrimination, 5=Absolutely discrimination). None of the items were reverse scored. The draft scale was evaluated based on the average score, with higher scores indicating a higher level of perceived discrimination.

Stage 2: Ensuring Surface Validity

This stage consists of soliciting the views of both non-experts and experts on the subject being studied, as well as pilot study participants, to determine whether a scale appropriately measures the construct it is designed to measure (14). In this study, surface validity of the draft scale was evaluated based on the opinions of the researcher, her advisor, and her colleagues, and a pilot study was conducted to test the comprehensibility of the statements in the item pool. In addition, an expert (teacher) in Turkish language and literature was consulted to ensure that the statements in the item pool were understood correctly. Face-to-face interviews were conducted during the pilot study, and the scale items were revised according to the feedback obtained.

Stage 3: Content Validation

The content validity ratio (critical CVR) method developed by Lawshe (1975) was used to assess content validity (22). To obtain objective results from content validity analysis, a panel comprising between 5 and 40 experts is recommended (23).

However, content validity studies based on expert opinion data are qualitative (23). Therefore, the obtained data should be converted into quantitative data by calculating the CVR and content validity index (CVI) (23). CVR is a statistic that provides information about whether or not to include items in a scale and is calculated as $(nR - N/2) / N/2$, where nR denotes the number of experts who said the item was relevant and N denotes the total number of experts who expressed their opinion (22). After eliminating items with a CVR that is zero or negative, the significance of the items with positive CVR values is evaluated according to the scale CVI (23).

In this study, a panel of 9 experts qualified in their field were asked to evaluate the items in the draft scale by rating each statement as “relevant,” “relevant but needs revision,” or “irrelevant.” The experts were asked to revise any item they considered incomplete and/or incorrect in terms of language and include it in the scale, and add their suggestions for new items in a separate recommendations box (24). The 9 experts in the panel returned their feedback within 1 month. The CVR of each statement was calculated according to the experts’ evaluations (Table 1).

Table 1. Content validity ratios of the items in the nurses’ perceptions of discrimination scale

Item Number	CVR	Result (Retain-Reject)	Item Number	CVR	Result (Retain-Reject)
1	1.000	Retain	19	1.000	Retain
2	1.000	Retain	20	1.000	Retain
3	1.000	Retain	21	0.778	Retain
4	1.000	Retain	22	1.000	Retain
5	1.000	Retain	23	1.000	Retain
6	1.000	Retain	24	0.778	Retain
7	1.000	Retain	25	0.778	Retain
8	1.000	Retain	26	1.000	Retain
9	1.000	Retain	27	1.000	Retain
10	0.778	Retain	28	1.000	Retain
11	1.000	Retain	29	1.000	Retain
12	1.000	Retain	30	0.778	Retain
13	0.556	Reject	31	1.000	Retain
14	1.000	Retain	32	1.000	Retain
15	1.000	Retain	33	1.000	Retain
16	1.000	Retain	34	1.000	Retain
17	0.778	Retain	35	1.000	Retain
18	0.778	Retain	36	1.000	Retain

CVR: Content Validity Ratio

Critical CVR is the minimum value needed to ensure a statistically significant level of agreement, and for a panel size of 9 experts, this value is 0.778 (22). Accordingly, any item with a CVR lower than 0.778 was removed from the scale. Based on the expert opinions, two items were combined and included in the scale as a single item.

The CVI of a scale is the average extent to which the scale items are perceived as appropriate for measuring the construct being measured (23). After making changes based on the expert panel’s opinions and recommendations, the scale CVI for the revised 34-

item draft scale was calculated by averaging the CVR values of the remaining items and was found to be 0.961. The fact that the scale CVI was greater than the critical CVR value of 0.778 indicates that all remaining items had a level of agreement above that of chance (23).

In summary, after obtaining expert opinions on the scope and language validity of the draft items of the NPDS (34 items), we determined the scale had a critical CVR of 0.778 and a CVI of 0.961. After statistically demonstrating the content validity of the 34-item draft NPDS, the piloting phase was started.

Stage 4: Pilot Testing

The scale was piloted with 20 people who shared the same characteristics as the sample group. The pilot study participants provided feedback about the clarity of the scale items, their appropriateness, the response options, and the quality of the items. In addition, the starting and ending times of the questionnaire were recorded during the test to calculate the average time required to answer the draft scale. The time required to complete the data collection tool was approximately 10 minutes. No changes were made to the draft scale based on the pilot group’s feedback and it was used as the final version distributed to the sample group.

Data Analysis

Descriptive statistics were used to determine the score distribution of the scale items. Pearson correlation coefficients were calculated to evaluate the relationships between items and between subscale and total scores.

Explanatory factor analysis was used to analyze the scale’s construct validity. Varimax rotation was performed to maximize the explained variance when determining the factor structure of the scale. The number of factors was determined based on the total explained variance.

In the reliability analyses, the techniques of internal consistency (Cronbach’s alpha) and split-half testing (Guttman’s split-half coefficient) were used. In addition, Pearson correlation analysis was used to measure the reliability between the subscales and the entire scale. Kruskal-Wallis and Mann-Whitney U tests were used to demonstrate the significance of relationships between scale scores and personal characteristics.

Ethical Considerations

Written institutional approval to conduct the study was obtained from the participating institutions and the study procedure was approved by a research ethics committee (date: 06.12.2019 decision: 06.12.2019/74555795-050.01.04-). Study data were collected after completing the informed consent process and only from nurses who signed the informed consent form.

RESULTS

Participant Characteristics

It was determined that 77.3% of the participants were female, 65.7% were health vocational high school and associate degree

graduates, 58.2% were aged 25 or younger, 74.5% worked in a private hospital, 51.7% worked in inpatient wards, 48% had 5 years or less of professional experience, 44.3% had worked in their current institution for 5 years or less, and 58.2% worked between 9 and 16 hours a day.

Validity Analysis Results

Construct Validity

The construct validity of the (34-item) scale was performed by exploratory factor analysis. The Kaiser-Meyer-Olkin (KMO) sample adequacy test (KMO = 0.92, $p < .001$) and Bartlett's sphericity test ($X^2 = 5023.904$, $df=435$, $p < .05$) were used to test the suitability of the scale items for factor analysis. The statistically significant results from these tests indicated that the scale items were suitable for factor analysis. In the first analysis, six factors emerged with eigenvalues of 1 or higher, with a total variance ratio of 60.94%. Regarding the explained variance, it is argued that the cumulative variance should be 95% in the fields of science and the natural sciences, whereas 50% is acceptable in

the field of social sciences, where knowledge is less precise (15). The cumulative explained variance exceeded 50% with the first four factors. The first factor solution obtained in exploratory factor analysis may not always be an interpretable or simple structure. In such cases, the factors can be made more interpretable through factor rotation, a process by which the reference axes of the factors are rotated to another position. The most commonly used rotation methods are varimax, quartimax, and equimax (27). In this study, varimax rotation was used. When the results of the analysis were examined, four items with shared variance values below the threshold of 0.45 were excluded from the analysis and factor analysis was repeated. The results revealed four factors with eigenvalues of 1 or higher explaining 52.9% of the total variance (Table 2).

After exploratory factor analysis, the scale consisted of 30 items that were reduced to 4 factors. The factors were labeled as the Personal Preferences and Individual Characteristics, Kinship and Closeness, Nurse Individual and Professional Characteristics, and Patient and Disease Characteristics subscales.

Table 2. Factor structure of the nurses' perceptions of discrimination scale (N=352)

Item No.	Domains			
	Personal Preferences and Individual Characteristics	Nurse Individual and Professional Characteristics	Patient and Disease Characteristics	Kinship and Closeness
5	.805			
21	.793			
24	.776			
3	.770			
25	.761			
30	.749			
23	.721			
10	.719			
4	.645			
13	.630			
7	.615			
1	.598			
12	.579			
28	.576			
29	.517			
20		.787		
17		.774		
19		.679		
6		.659		
26		.595		
31			.688	
33			.634	
34			.619	
32			.601	
27			.594	
16				.618
8				.588
2				.564
14				.540
15				.499
Eigenvalue	9.003	3.580	1.720	1.586
Explained variance (%)	30.011	11.935	5.735	5.586
Total variance (%)	52.966			
Kaiser-Meyer-Olkin (KMO)	0.902			
Bartlett's Test of Sphericity	$\chi^2=5023.904$	SD=435	$p<.001$	

Reliability

The reliability of the scale was analyzed using internal consistency and split-half testing methods. The Cronbach's alpha of the 30-item scale was found to be 0.895, indicating high internal consistency.

Secondly, each subscale was analyzed for split-half reliability by dividing the items in half and determining Guttman's split-half coefficient. Using this method, the 15 items in the Personal Preferences and Individual Characteristics subscale (items 1, 3, 4, 5, 7, 10, 12, 13, 21, 23, 24, 25, 28, 29, and 30) were found to have a Cronbach's alpha of 0.926 and Guttman's coefficient of 0.864; the 5 items comprising the Kinship and Closeness subscale (items 6, 17, 19, 20, and 26) had a Cronbach's alpha of 0.805 and Guttman's coefficient of 0.664; the 5 items in the Nurse Individual and Professional Characteristics subscale (items 27, 31, 32, 33, and 34) had a Cronbach's alpha of 0.772 and Guttman's coefficient of 0.578; and the 5 items in the Patient and Disease Characteristics subscale (items 2, 8, 14, 15, and 16) had a Cronbach's alpha of 0.669 and Guttman's coefficient of 0.535. The scale was found to have very good split-half reliability (Table 3).

If a developed scale contains subscales, the relationship between subscale and total scores should be examined (23). For the NPDS,

we observed greater than 60% correlation between subscale scores and the total scale score (Table 4).

The final NPDS was a 30-item instrument using a 5-point Likert-type scale (1=Absolutely not discrimination, 2=Partially discrimination, 3=Not sure, 4=Largely discrimination, 5=Absolutely discrimination). Scoring is based on the item average, with possible scores ranging from a minimum of 30 to a maximum of 150. Higher scores indicate a higher level of perceived discrimination.

Comparison of the Nurses' Individual Characteristics and NPDS Scores

The mean NPDS total score of the nurses was 121.57 ± 18.49 (range: 40-150). Subscale scores were 68.28 ± 10.09 (range: 16-75) for the Personal Preferences and Individual Characteristics subscale, 17.80 ± 5.55 (range: 6-25) for the Kinship and Closeness subscale, 17.83 ± 4.94 (range: 5-25) for the Nurse Individual and Professional Characteristics subscale, and 17.67 ± 4.78 (range: 5-25) for the Patient and Disease Characteristics subscale.

When the nurses' NPDS scores were compared by type of institution, the unit in which they work, education level, age, gender, years of work experience, years working in their current institution, and working hours, significant differences were observed according institution ($p < .001$), unit ($p = .009$),

Table 3. Reliability analysis of the subscales of the nurses' perceptions of discrimination scale (NPDS) (N=352)

Subscales	Item no.	Variance with item removed	Item-total correlation	Cronbach's alpha with item removed
Personal Preferences and Individual Characteristics Cronbach's alpha=0.926	1	89.12	.544	.925
	3	86.66	.739	.918
	4	89.19	.611	.922
	5	87.27	.798	.916
	7	88.11	.615	.922
	10	88.52	.690	.919
	12	88.99	.564	.924
	13	92.47	.574	.923
	21	87.88	.773	.917
	23	89.04	.690	.920
	24	89.13	.710	.919
	25	90.13	.699	.920
	28	90.15	.552	.924
	29	90.72	.529	.924
	30	89.10	.721	.919
Kinship and Closeness Cronbach's alpha=0.805	6	22.12	.546	.781
	17	18.80	.679	.738
	19	19.90	.586	.770
	20	18.50	.705	.729
	26	24.12	.444	.807
Nurse Individual and Professional Characteristics Cronbach's alpha=0.722	27	15.65	.540	.650
	31	16.58	.542	.652
	32	18.87	.384	.709
	33	17.68	.448	.687
	34	14.87	.506	.668
Patient and Disease Characteristics Cronbach's alpha=0.669	2	15.63	.428	.615
	8	15.68	.465	.599
	14	16.87	.312	.667
	15	16.13	.416	.621
	16	14.82	.496	.582
NPDS Total Cronbach's alpha=0.895				

and working hours ($p=.004$), while there were no significant differences according to education level, age, gender, professional experience, or years working in their current institution ($p>.05$) (Table 5).

Table 4. Correlation analysis between nurses' perceptions of discrimination scale total and subscale scores

Subscale	Statistic	Personal Choice	Relatedness/Closeness	Professional Characteristics	Patient and Disease Characteristics	Total Score
Personal Preferences and Individual Characteristics	r	1	.355	.202	.395	.794*
	p		<.001	<.001	<.001	<.001
	N	352	352	352	351	352
Kinship and Closeness	r		1	.448	.392	.711*
	p			<.001	<.001	<.001
	N		352	352	351	352
Nurse Individual and Professional Characteristics	r			1	.389	.607*
	p				<.001	<.001
	N			352	351	352
Patient and Disease Characteristics	r				1	.714*
	p					<.001
	N				351	351
Total Score	r					1
	p					
	N					352

*Pearson correlation coefficient >0.60

Table 5. Comparison of nurses' mean NPDS scores according to individual characteristics

Variable		n	%	NPDS Total Score (N=352)		Corrected P value
				Median (IQR)	Mean $\pm$ SD	
Type of Institution	Private Hospital	134	38.1	129.5 (119.0-136.0)	129.67 $\pm$ 11.62	<.001*
	Public University Hospital	90	25.6	132.0 (121.0-139.0)	124.20 $\pm$ 19.93	
	Private University Hospital	128	36.4	114.0 (106.0-124.0)	113.11 $\pm$ 17.53	
Unit	Inpatient ward	182	51.7	126.0 (116.0-135.0)	124.26 $\pm$ 15.45	.009*
	Outpatient clinic	62	17.6	123.0 (117.0-132.0)	121.35 $\pm$ 19.08	
	Specialized branch	41	11.6	129.0 (108.0-137.0)	120.24 $\pm$ 21.95	
	Management	16	4.5	115.0 (100.0-118.5)	105.12 $\pm$ 28.82	
	Other	51	14.5	119.0 (111.0-131.0)	118.45 $\pm$ 18.18	
Education Level	Health Vocational High School	115	32.7	121.0 (111.0-132.0)	119.60 $\pm$ 18.12	.052
	Associate Degree	116	33.0	127.0 (116.0-135.5)	123.46 $\pm$ 18.13	
	Undergraduate Degree	103	29.3	123.0 (114.0-137.0)	123.25 $\pm$ 17.78	
	Postgraduate Degree	18	5.1	115.5 (103.0-126.0)	112.33 $\pm$ 23.91	
Age	≤ 25 years	205	58.2	123.0 (113.0-134.0)	121.57 $\pm$ 16.92	.819
	26–39 years	120	34.1	124.5 (113.5-134.5)	121.89 $\pm$ 19.073	
	≥ 40 years	27	7.7	124.0 (113.0-142.0)	120.11 $\pm$ 6.395	
Gender	Female	272	77.3	124.0 (113.0-134.0)	121.66 $\pm$ 18.81	.632
	Male	80	22.7	123.5 (112.0-133.0)	121.26 $\pm$ 17.43	
Professional Experience	<1 year	77	21.9	122.0 (111.0-134.0)	120.62 $\pm$ 18.26	.114
	1–5 years	169	48.0	125.0 (116.0-134.0)	123.44 $\pm$ 15.25	
	6–10 years	62	17.6	120.5 (108.0-132.0)	116.48 $\pm$ 22.47	
	≥ 11 years	44	12.5	127.0 (115.5-141.0)	123.18 $\pm$ 22.75	
Years Working in Current Institution	<1 year	140	39.8	121.5 (111.0-135.0)	121.10 $\pm$ 17.86	.484
	1–5 years	156	44.3	125.0 (115.0-132.0)	121.30 $\pm$ 18.93	
	6–10 years	35	9.9	122.0 (114.0-134.0)	121.00 $\pm$ 20.69	
	≥ 11 years	21	6.0	127.0 (117.0-142.0)	127.66 $\pm$ 15.219	
Working hours	≤ 8 hours	120	34.1	124.0 (116.5-137.0)	123.75 $\pm$ 16.78	.004*
	9–16 hours	205	58.2	125.0 (113.0-134.0)	121.25 $\pm$ 19.88	
	16–24 hours	7	2.0	118.0 (110.0-134.0)	117.14 $\pm$ 16.35	
	Varies	20	5.7	113.0 (106.5-116.5)	113.25 $\pm$ 10.28	

NPDS: Nurses' Perceptions of Discrimination Scale, IQR: interquartile range, 25th-75th percentiles, * $p<.05$

DISCUSSION

In Turkey, discriminatory behaviors in the workplace are exhibited in the private and public sectors for numerous reasons (19). Previous studies on discrimination in health care show that nurses are exposed to discrimination and can also engage in discriminatory behaviors themselves (26). Therefore, it is important to determine what is perceived by nurses as discrimination and to present solutions. There are many scales that measure levels of perceived discrimination (16,17,27). However, as the NPDS focuses only on discrimination behaviors frequently encountered by nurses, it is a specific and useful scale for measuring perceptions of discrimination that can be used in nursing practice.

In the literature, scales developed to measure discrimination mostly evaluate discriminatory behaviors arising from a single cause. For example, the Gender Discrimination Scale allows the measurement of levels of gender-based discrimination perceived by women. The 20-item scale has a 5-factor structure explaining 68.75% of the total variance (28). In addition, the Fraboni Scale of Ageism is a frequently used tool designed to measure age-based discrimination. Developed by Fraboni in 1990, the scale consists of three domains: prejudice (antilocution), avoidance, and discrimination (29). In 2012, Kutlu et al. adapted the scale to Turkish (30). The Positive and Negative Ageism Scale is another ageism scale that addresses all dimensions of ageism (17). The Political Discrimination Scale was developed in Turkish to measure workplace discrimination within organizations associated with political reasons. This scale assesses the presence of political discrimination in professional settings with both employee and manager perceptions (31).

Discrimination is a global problem, and being of different religion, faith, or sect is seen as a basis of discrimination in many societies. Muslims, Christians (Catholics, Orthodox, Protestants), Jews, or people of other religions may experience religious discrimination. In the United States of America, Kawika Allen et al. developed the Religious Discrimination Scale (RDS) in 2018 with items specific to the Muslim population (32). The scale has limited generalizability, but Tüysüz and Çinici studied individuals with different beliefs and conducted the Turkish adaptation and validity and reliability analyses of the RDS in 2020 (27). However, there is no measurement tool developed for nurses' perceived discrimination. The NPDS developed in this study is a unique tool that fills this gap in the literature.

The NPDS consists of 30 items easily rated on a 5-point Likert-type scale. It has four factors and can be used in its entirety or as separate subscales corresponding to each of the factors. The first factor, Personal Preferences and Individual Characteristics, identifies perceived discrimination in processes such as hiring, firing, promotion, use of breaks and leave, and assignment or in patient care that arises from personal preferences and individual characteristics such as sexual orientation, religion and beliefs, political opinion, and ethnicity. The second factor, Nurse

Individual and Professional Characteristics, consists of other discriminatory behaviors that nurses experience in the workplace due to their individual and professional characteristics. This subscale provides important information because it includes the discriminatory behaviors experienced by nurses in the workplace. The Patient and Disease Characteristics subscale addresses other discriminatory behaviors directed toward patients during nursing care due to their personal and disease characteristics. As this subscale concerns discrimination by nurses against patients, it is particularly useful in providing grounds for nurses to reflect on their own behaviors. The Kinship and Closeness subscale deals with behaviors that can be perceived as discrimination due to greater familiarity, kinship, and common origins (e.g., university, hometown). This domain identifies certain attitudes and behaviors shown to team members, relatives, and acquaintances in the workplace or in patient care that are perceived by nurses as discriminatory. Detecting perceptions of these behaviors as discriminatory is important in terms of finding a solution to the problem of discrimination.

Content validity was assessed by obtaining the opinions of experts in the field. In the factor analysis performed to ensure construct validity, the scale was found to have high internal consistency between the entire scale and its component factors.

The statements that make up the scale should not go beyond the construct being studied and should be relevant to and highly representative of the construct of interest. This is quantified using content validity measures (22). The critical CVR is determined according to the number of experts and was 0.778 for this study. The CVI was calculated as 0.961, indicating that the scale has good content validity. Explanatory and confirmatory factor analyses were used to assess the construct validity of the NPDS. Factor analysis is defined in the literature as the degree to which the created measurement tool can accurately measure the feature it aims to measure without comparison to any other feature, and it is frequently used to determine validity (23). The explanatory factor analysis conducted in this study revealed a four-factor structure that explained 52.97% of the total variance.

Reliability analyses performed in research can utilize methods such as internal consistency, item analysis, test-retest analysis, and split-half testing (24). The reliability analysis in this study included the internal consistency (Cronbach's alpha) and split-half testing (Guttman's split-half coefficient) methods. When evaluating internal consistency, a Cronbach's alpha coefficient of 0.70 or higher is an indicator of adequate reliability (33). In this study, the Cronbach's alpha of the 30-item NPDS was 0.89, demonstrating high internal consistency.

Furthermore, in factor analysis the item-total correlation values of the scale ranged from 0.49 to 0.80. This finding is consistent with the literature, which states that item-total score correlation coefficient should be greater than 0.20 for a sample size of 350 or larger (23).

In the present study, the average level of discrimination

perceived by the nurses was closer to the upper limit of the score range. This result shows that nurses had high perceptions of discrimination. In other words, it can be said that the participants believe that patients and nurses should not be discriminated against (positively or negatively) for any reason.

In Turkey, there is a noticeable difference between public institutions and private hospitals in terms of service quality and delivery. Public hospitals are funded by the government and provide services at little or no cost to the patient, whereas in private hospitals the cost of care for the patient is very high and hotel services are more developed (34). As the individuals who pay for care in private hospitals are at a significantly different economic level than the general population, it can be anticipated that they also want more attention from nurses, and these institutions expect their staff to act accordingly. In the present study, there was a significant difference in mean NPDS scores according to the type of institution in which the nurses worked, with those in private hospitals reporting lower perceptions of discrimination than nurses working in the public sector. This finding suggests that nurses working in private hospitals may show preferential treatment during nursing care because they serve wealthy or famous VIP (very important person) patients.

Furthermore, nurses working in private hospitals considered preferential treatment of their colleagues in the workplace for any reason (e.g., education, experience, or being married and having children) to be less discriminatory compared to nurses working in the public sector. This may be attributed to the fact that they work longer hours and different shifts in the private sector. Nurses who are married and have children may not want to be assigned the night shift and may request exemption from this duty. This is supported by the literature. Being married and having children are often used as reasons for workplace discrimination and are seen as factors that make professional life more difficult (35). In one study, the majority of the participants prioritized family life and put career and job on the back burner, which the authors attributed to the high proportion of participants who were married and had children (36).

Mean total NPDS scores did not differ significantly according to the nurses' gender in this study. This shows that male and female nurses agree on what behaviors constitute discrimination. However, the literature suggests that in general, male nurses have a different mindset than female nurses. In particular, compared to female nurses, male nurses are more interested in being nurse academicians or regard nurses working in management as more prestigious (37). This suggests that male nurses may behave preferentially toward academicians and nurse managers in the work setting or in patient care.

In this study, there was a significant difference in NPDS scores based on the hospital unit in which the nurses worked. Low perceptions of discrimination among nurses working in management suggest that nurse managers may exhibit discrimination in the work setting or patient care for various

reasons.

In the literature, it has been noted that managers discriminate in the workplace based on ethnicity or race, religion or sect, and political opinion (38). Being pregnant may also be regarded by managers as a disadvantage during recruitment (35). Another study focusing on the discriminatory behaviors exhibited by managers in the health care field suggested that managers discriminate against nurses mostly in relation to their education, knowledge, and skills, imposed other duties such as secretarial services on nurses, and were primarily responsible for disruptions in the nursing profession (39). Yet another study addressing managerial problems in nursing reported that there were systematic inconsistencies and differential treatment in the training and appointment of nurse managers and suggested solutions to ensure standardization (40).

CONCLUSION

The NPDS is a valid and reliable measurement tool that will help institution managers and nurse managers determine nurses' level of perceived discrimination. We believe this scale will also facilitate empirical studies investigating nurses' perceptions of discrimination. By applying this scale in their institutions, nurse managers can concretely and scientifically assess perceived discrimination among nurses, report the results, and develop policies accordingly. Deterrent interventions can be introduced for those who engage in discriminatory behaviors, while those who are exposed to discrimination can be informed about coping methods. Steps can also be taken to promote nurses' sense of organizational belonging and organizational citizenship behaviors, which are factors believed to influence perceptions of discrimination. Further studies with larger samples or conducted in different regions and in different groups of nurses would be beneficial.

Limitations

The findings of the study are limited by the sample size and the responses provided by the participants in the sample. Test-retest analysis can be performed to further evaluate the reliability of the scale. Furthermore, the fact that the data were obtained during the COVID-19 pandemic may have affected the results.

Conflict of interests

The authors declare that there is no conflict of interest in the study.

Financial Disclosure

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Ethical approval

Ethical approval of the study was obtained from the Istanbul University-Cerrahpaşa Social and Human Sciences Ethics Committee (date: 03.12.2019, number: 2019/128).

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