International Journal of Hospital Research 2020, 9(2)
http://ijhr.iums.ac.ir
Research Article

Empathic communication in outpatient clinics: validity and reliability of Consultation and Relational Empathy (CARE) Measure in Iran

Ali Mohammadi [1] Koorosh Kamali [1*]

[1]Department of Public Health, School of Public Health, Zanjan University of Medical Sciences, Zanjan, Iran.

Abstract

Background and Objective: physician relationship. Physician with good empathic communication, will be able to find insight toward patients' experiences. We investigated the psychometric properties of an Iranian version of the Consultation and Relational Empathy (CARE) Measure in outpatients' clinics of teaching hospitals.

Method: This research was carried out as cross-sectional study at outpatient clinics of teaching hospitals in Zanjan city in 2018. The study population included 285 outpatients selected by systematic sampling. The Iranian version of CARE measure was used for the data collection. SPSS (version 16) for Windows was used to analyze the data. Statistical analyses included descriptive: mean, percentages and frequency and analytical statistics: Pearson's correlation and factor analysis (construct validity), Cronbach's alpha (internal consistency), factor analysis and Independent samples t-test and ANOVA. P values less than 0.05 were assumed statistically significant.

Results: The factor analysis on ten items of CARE measure leaded to one prominent factor with an eigenvalue of 6.04 that explained 61.04 percent of the variance. Correlations of Items-total CARE measure score ranged from 0.64 to 0.77. Reliability of the Measure was 0.93 that higher than minimum accepted value (0.7). Overall mean of CARE Measure score was (28.5± 8.7). Difference in mean of CARE Measure score was statistically significant on the base of education characteristics (f = 2.89, p = 0.036). There were statistically positive and significant association between the CARE items scores and outpatients' overall satisfaction (r = 0.63, p <0.001) and recommending physician to their relatives (r = 0. 51, p <0.001). Majority of the outpatients (72percent) agreed with item" physicians really listen". In contrast, less than a half of the outpatients (40.9 percent) agreed with item" physicians fully understanding their patient concerns ".

Conclusion: The findings of present study showed that patients' perceived relational empathy from physicians was at average and high average level. Thus, there is room for improvement of empathic communication skills during consultation process for health care team (especially physicians).

Keyword: Physician Empathy, outpatient, CARE measure and Empathic communication

Background and Objective

Physician empathy is an essential component of every primary health care consultation and has the pivotal role in patients- physician relationship. It has relationship with several advantages in the context of medical care such as: patient satisfaction, patients' enablement and better health outcomes[1]. Empathy from viewpoint of the patient care is defined as cognitive attribute that consists understanding of patients' concerns, experiences, and views, combined with a capacity to communicate this understanding to patients, and intent to help them. The main idea in this definition is physician ability in the communication of understanding to his/her patients. It is believed that if physicians can have empathic communication, they will be able to find insight toward patients' experiences, as if they themselves have experienced the same problem[2].

*Corresponding Author: Koorosh Kamali
Email: drkamali@zums.ac.ir

The understanding of patient personal, emotional and family concerns along with an intention to help is considered an essential aspect of patients- physician relationship. Mutual understanding creates dynamic feedback in which both physician and patients play active role in development of empathic behaviors[3]. Core idea in the above definitions is the communication of empathy perception on behalf of physician to patients so that they perceive their physician empathy for using better medical therapy[4]. High level of physician empathy toward patient links to higher self-efficacies and convenience of patients, treatment effectiveness and high satisfaction of physician[5]. As well as, it leads to appropriate feedback for physician[6]. One of important elements in empathy is behavioral attribute, namely physicians or clinicians who try to perceive their patient, they will probably have more successful treatment; provide recommendations according to patients' life styles till they are used well by patients[7].

The CARE Measure was developed as an instrument to evaluate patients' perception of physicians' empathy at the clinical encounters in the UK by Mercer et al[8]. This measure was used in outpatient clinics to evaluate empathy of general practitioner during consultation process from patients' perspectives[8] . It has widely been used in UK and validated in German and Japan[9]. Also, it has been applied in the context of nursing cares[8] for assessment of empathy level in social and economic groups with low and high deprivation[10].

In this study, we investigated the psychometric properties of an Iranian version of the CARE Measure in outpatients' clinics of teaching hospitals where specialist physicians deliver medical consultations to patients. The aim of this study was to evaluate outpatients' perceptions of physicians' empathy and provide suitable feedback and valuable information for health team and health policy-makers.

Methods:

Study design: This descriptive cross–sectional study was implemented in the outpatient clinics of the teaching hospitals of Zanjan City in 2018. The study population included outpatients who utilized the medical care and consultation services of teaching hospitals in Zanjan City, located in the north-west of Iran. Sample of 285 outpatients in the teaching hospitals were selected by systematic sampling (one day at week exception holidays). Inclusion criteria were: 1- to have age 18 – 75, 2- patients who had been visited at least one time or more during past six months by the physician. Exclusion criteria were inability for response to questions and unwillingness to participation at study[4,11].

Data collection: the following instruments were used to collect the data. The CARE measure that is a scale developed by Mercer and et.al to evaluate patients' perception of physicians' empathy in the clinical encounter during medical consultations in the UK[12]. It has widely been applied in medical care centers of the UK and several countries including German and Japan[9]. This measure consists of questions related to patients' perception from physician understanding of their concerns, experiences[13].

The CARE Measure is an instrument for measurement of quality of consultation at medical care setting. It asks patients' perception about the ability of communicative empathy at medical and health professions and can get the

information in the following contexts: ability of understanding of patients' state, viewpoint, feelings; ability to communicate that understanding to patients; action on the base of patients' perceptions to intent help to cure them[6]. The CARE Measure contained two sections: the first section is related to demographic information of the participants; the second part included 10 items related to patients' perception of physicians' empathy with a five-point Likert scale, where Quince and Parker[5] corresponds to the excellent, and Hanževački et al[1] is equal to poor[1]. In addition, a question was asked about satisfaction with length of consultation time, that is why there is association between length of time spent in consultation and quality of clinical care[9]. Also, a question was included about knowing physicians before and recommending them to relative and friends research of Krowinski and Steiber[14] these questions were scored by a 5-point Likert scale similar to previous studies[1,9].

Moreover, 10 – item Patient *Satisfaction Scale* was used to collect data on patients' satisfaction with care. This scale was developed by Hojat et.al to measure patient overall satisfaction with the consultation and primary care[4]. There are strong documents on reliability and validity of this scale[15]. Each item was scored with a 7-point Likert scale (7=strongly agree, 1=strongly disagree). Overall satisfaction score was calculated from sum of 10 items scores. The range of possible score was 10–70. A higher score implies a greater satisfaction with the physician vice versa.

Procedure: After receiving approval of the ethics committee of ZUMS and doing necessary coordination with hospitals, questioners were sent to research field. The questionnaires (CARE Measure) along with a brief explanation containing purpose of it, being anonymous of participants, were distributed among outpatients. They were assured that their personal information would not have disclosed to nobody and all of the data is considered confidentially. To understand better questions, a guideline was included at the beginning of questionnaire that explained how to complete it. Participation at the study was voluntary.

Statistical analysis: SPSS (version 16) for Windows (SPSS Inc. Chicago, USA) was used to analyze the data. Exploratory factor analysis (EFA) was used to examine underlying construct of the CARE Measure (in Iran community)[16]. Correlation coefficients between the CARE Measure items with total score were used to examine measure homogeneity and Cronbach's alpha to check internal consistency[17]. Descriptive statistics: mean, percentages and frequency were applied for survey relationship empathy level with demographic characteristics. Independent samples t-test and ANOVA were utilized to measure significance of means. Pearson's correlation was used for analysis of association between patients overall satisfaction and perceived empathy of physicians.

Results

Outpatient characteristics and statistical descriptions of CARE Measure

The mean of outpatients' age was 36.6. The majority of study participants (41.3 percent) were housewife. Female made up 58.3 percent of the participants. Thirty two percent of the participants had high school education and 31.5 percent with higher education. The majority of participants in study (77.9 percent) had insurance coverage.

Overall mean of CARE Measure score was (28.5± 8.7) and mean of overall satisfaction

with consultation was (46.6± 11.7) (in terms of 7 point Likert scale). Both Mean of CARE Measure score and mean of overall satisfaction at patients with higher education were more than patients with lower education. Difference in mean of CARE Measure score was statistically significant on the base of education characteristics (f = 2.89, p = 0.036). Patients with insurance coverage and employee job had more satisfaction with consultation, this difference of mean was statistical significant on the base of job (f = 3.98, p = 0.004) and insurance characteristics (2 = 2.32, p = 0.02). There were not statistical significant difference on the base of gender and age characteristics. (table.1).

Table1. Mean, Standard deviation of overall satisfaction, CARE based on characteristics of the Respondents (n=285)

characteristics	**Category**	Mean (SD) CARE	p-value	Mean (SD) overall satisfaction	p-value
Age in Years	≤29	27.7 (8.5)		45.3(10)	
	30-44	28.8 (9)	0.610	47 (12.7)	0.701
	45- 64	28. 4 (9.25)		47.4 (12.9)	
	65 and above	30.5 (5.4)		48.9 (8.6)	
Gender	Male	28.2 (9)	0.162	45.3 (12.9)	0.742
	Female	28.6 (8.6)		47.4 (10.7)	
Insurance Status	insurance	28. 4 (9.1)		47.5 (11.5)	0.021
	No insurance	28.7 (7.5)		43.3 (11.6)	
Literacy Rate	Illiterate	26. 2 (8.3)		46 (12.1)	
	Primary	26. 4 (7.6)	0.036	44.7 (9.6)	0.103
	Secondary	27. 6 (10.5)		45.5 (10.9)	
	Higher Education	30. 4 (8.3)		49.3 (13.4)	
Occupation	employee	29.5 (9.8)		48.5 (13.2)	
	Free job	26.2 (8.4)		40.8 (13.6)	
	Housewife	28.9 (8.5)		48.4 (9.9)	0.004
	Student	28.9 (7.1)		47.9 (7.6)	
	unemployed	27.2 (8.5)		44.7 (10.8)	
Total		28.5(8.7)		46.6 (11.7)	

Consultation characteristics

Less than a half of outpatients (46.5 percent) satisfied with medical consultations process. But 41.9 percent of the patients had satisfaction with consultation length. Almost one quarter of outpatients expressed that they knew their physicians well from beforehand. However, more than a half of outpatients (55.6 percent) said they had willingness to recommend their physicians to relatives and friends (Table 2). Means and standard deviation (SD) of consultation characteristics are presented in the figure 1.

Figure1.mean and SD of outpatients consultation characteristics (n=285)

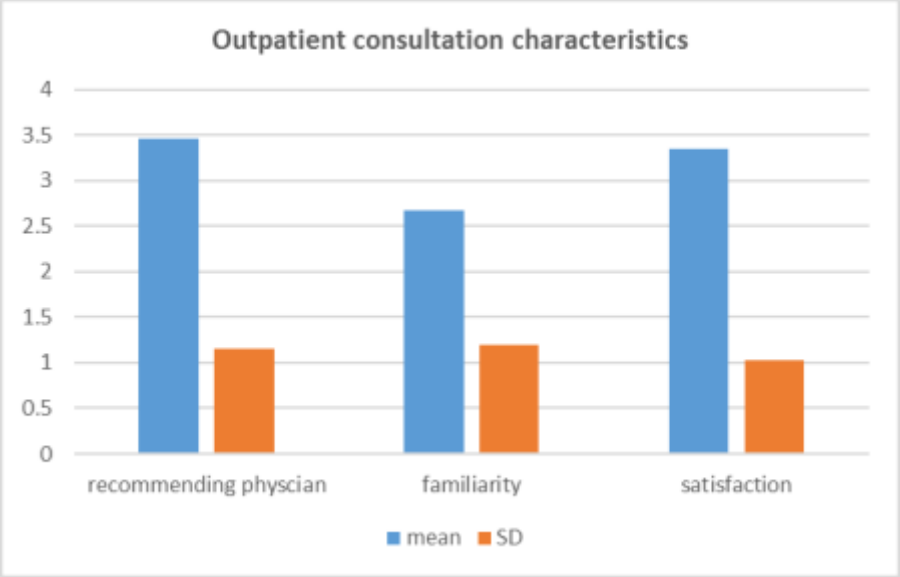

Table 2. Outpatients' responses about consultation characteristics (n=285)

consultation characteristics	status	n (%)
How satisfied was the patient with the consultation of the physician		
	Completely satisfied & satisfied	132(46.5)
	uncertain	104(36.5)
	Completely unsatisfied & unsatisfied	49 (17)
How well the patient knew the physician		
	Not at all(1)	63 (22.2)
	2	57 (19.8)
	3	98(34.5)
	4	46(16)
	Know very well (5)	21(7.5)
Would you recommend the doctor to your family or friend		
	Definitely not (1)	28(9.8)
	Probably not (2	21(7.5)
	Not sure (3)	77(27.1)
	Probably yes (4)	109(38.3)
	Definitely yes (5)	50(17.3)

Validity and reliability of the CARE Measure

To check face validity, the CARE Measure, 5 experts at the related field were asked that their points of view express on the Measure. Then, their opinions and comments have been considered in the final scale. The internal reliability of the CARE Measure, measured by Cronbach's alpha, was high at 0.93. Corrected item - total correlations were fairly high for all items, it shows appropriate internal consistency of the Measure (Table 3). To investigate the fitness and adequacy of sample data for entering it in EFA, we did Kaiser-Meyer-Olkin analysis (KMO). The statistical criteria of KMO (0.94) and the Bartlett Test of Sphericity (value 1404.43, $P < 0.001$) indicated the fitness of the sample data to do the EFA. The factor analysis on ten items of the CARE measure leaded to one prominent factor (eigenvalue > 1) that explained 61.04 percent of the variance. Factor loading coefficients are presented in Table4. Since only a single factor was extracted, Varimax

rotation was not possible. Furthermore, the findings indicated a statistically positive and significant association between CARE items scores and outpatients' overall satisfaction (r = 0.63, p <0.001) and recommending physician to their relatives (r = 0. 51, p <0.001) (Table 4).

Table3. Reliability and homogeneity of the CARE Measure (n=285)

items	Scale mean if item deleted	item-total empathy score	Cronbach's alpha if item deleted
1-Making you feel at ease	25.63	.64	.923
2-Letting you tell your story	25.51	.77	.916
3- Really listening	25.47	.73	.919
4 - Being interested in you as a whole person	25.73	.70	.920
5- Fully understanding your concerns	25.78	.76	.917
6-Showing care and compassion	25.71	.77	.916
7- Being positive	25.57	.74	.918
8- Explaining things clearly	25.48	.68	.921
9 -Helping you to take control	25.65	.70	.920
10 - Making a plan of action with you	25.83	.68	.921

Table4. Internal structure of the CARE Measure: exploratory factor analysis, and correlations of each item with scores of patient overall satisfaction and recommending physicians (n=285)

items	Coefficients of Factor*	patient satisfaction†	physicians recommendation‡
1-Making you feel at ease	.71	0.53	0.42
2-Letting you tell your story	.83	0.59	0.40
3- Really listening	.79	0.54	0.40
4 - Being interested in you as a whole person	.76	0.46	0.32
5- Fully understanding your concerns	.82	0.48	0.49
6-Showing care and compassion	.82	0.47	0.21
7- Being positive	.80	0.51	0.41
8- Explaining things clearly	.74	0.48	0.48
9 -Helping you to take control	.76	0.42	0.45
10 - Making a plan of action with you	.74	0.43	0.36

* All items loaded onto a single factor and thus varimax rotation was not possible
† Correlation between scores of the item and score on the Jefferson Scale of Patient Satisfaction.
‡ Correlation between scores of the item and responses to item: "I would recommend my physician to my family and friends

Reliability of the Measure was examined by applying Cronbach's alpha coefficient. The reliability coefficients of the CARE measure and outpatients' overall satisfaction were 0.93 and 0.91 respectively.

Details of the CARE Measure

Findings of present study in the context of outpatient perception level of CARE measure are presented in Table 5. Majority of the outpatients (72percent) agreed with item" physicians really listen ", their evaluation with respect to physicians' performance at this case were "good" and "very good". In contrast, less than a half of the outpatients (40.9 percent) agreed with item" physicians fully understand their patient concerns ". Outpatients rated their physicians' performance at level of poor till middle. In

simple words, patients thought that physicians focuses less on their concerns.

Table5. Consultation and Relational empathy (CARE) Measure items frequency distributions (n=285)

Items, n (%)	Poor	Fair	good	Very good	excellent
Average for all items	45(15.9)	52 (18.1)	105 (36.8)	64 (22.6)	19 (6.5)
1-Making you feel at ease	41 (14.5)	53 (18.7)	112 (39.1)	63(22.1)	16 (5.5)
2-Letting you tell your story	40 (14)	45 (15.7)	108 (37.9)	68 (23.8)	24 (8.5)
3- Really listening	30(10.6)	50 (17.4)	108 (37.9)	80 (28.1)	17 (6)
4 - Being interested in you as a whole person	51 (17.8)	56 (19.6)	109 (38.3)	50 (17.4)	19 (6.8)
5- Fully understanding your concerns	60(20.9)	56 (19.6)	92 (32.3)	64 (22.6)	13 (4.7)
6-Showing care and compassion	57(19.9)	54 (19.1)	93 (32.8)	61 (21.3)	20 (7.2)
7- Being positive	35(12.3)	52 (18.3)	118(41.3)	61 (21.3)	19 (6.8)
8- Explaining things clearly	35(12.3)	46 (16.2)	108(37.9)	74 (26)	22 (7.7)
9 -Helping you to take control	45(15.7)	54 (19.1)	101(35.3)	73 (25.5)	12 (4.3)
10 - Making a plan of action with you	66(23.4)	50 (17.4)	101(35.3)	52 (18.3)	16 (5.5)

Discussion

Physician empathic and emotional relationship with patients can have affected positively on health outcomes of the patients[18]. Thus, the field of medicine not only is committed to train skillful and aware physicians, but also it is responsible for medical care with engagement of empathy[19]. That is why the measurement of patient perceived empathy of physician is important and one of the principal ways to get facts from patients viewpoints about physicians' empathy[20].

Findings of present study in the context of CARE showed that this measure is a one-dimensional instrument with ten items that its main construct is in accordance with original measure of Mercer et al[8]. In the study of Mercer et al. on "Development and preliminary validation and reliability of an empathy-based consultation process measure", validation and reliability of the CARE measure to evaluate patients' perception from physicians' relational empathy was confirmed with strong correlation coefficient (r =.85)[8]. In this study, results of the EFA leaded to one factor that explained 60.04 percent of the variance with range of factors coefficients 0.81 to 0.83. There is closeness and alignment between both studies. Findings of present study in the context of the CARE showed that empathy from patients viewpoints was at upper intermediate to good level (m=28.5). This finding is close to the results of study of Hanževački et al. (1). In study of Hanževački et al. entitled "Reliability and validity of the Croatian version of CARE Measure in primary care setting in Croatia", median score of the CARE measure was 36[1] that empathy level is a little more than our study. In the above mentioned study, participants rated their physicians' empathy at high level so that majority of those (86.9%) rated all items “good” or “very good”. The highest and lowest frequency of score (very good and excellent) were related to the item "Being positive of physician" (66.6 percent), and the item "Making patient feel at ease" (53. 4 percent) respectively[1]. In this study, most patients (59.4%) expressed the positive evaluation from physicians' empathy (“good” or “very good”). The item" physician really listen" had the highest frequency of score (good and very good) (66 percent). 62.6 percent of the patient rated physicians' empathy relevant to item "Being positive of physician". The lowest frequency of score (very good and excellent) was related to the item "Making a plan of action for patient" (53. 6 percent).

On the other hand, the findings of present study in context of CARE was less than results of Bikker et al[6], Mercer et al[12] and Aomatsu et al[9] studies. The study conducted by Bikker et al. on

measuring empathic communication in primary care nurses in Scotland, mean score of the CARE measure was (45.9± 5.9)[6]. The findings of Mercer et al. research about "patients' views on communication with anesthetists by using the CARE Measure" indicated that mean score of the CARE measure was (43.8± 6.5). Mean score of the CARE measure varied from 35.1 to 47.3 and small number of patients rated their physicians' empathy as "poor"(12). The results of study of Aomatsu et al. on" patients' perception of physicians' empathy in Japan" found that patients scores had positive skewed towards the higher, Mean of the CARE measure was 38.4 with range of 16 to 50[9].

Findings of present study in the context of patients' overall satisfaction, outpatients mentioned upper intermediate satisfaction from medical care and consultation. This finding has alignment with the results of Uddin et al[21]. In a study conducted by Uddin et al. on "patient satisfaction with medical care in Bangladesh" found out that more than a half of the participants at study(58.3 percent) were made up of female and mean score of overall satisfaction was 3.2 (in terms of 5 point Likert)[21]. On the other hand, the finding of this study about patient satisfaction was less than result of Şahin et al[22] study. The survey done by Şahin et al. on" evaluate validity and reliability of patient overall satisfaction scale in Turkey", researchers reported mean score of overall satisfaction (63.9) and the findings of study indicated that mean score of overall satisfaction for female was significantly higher than male outpatients($p < 0.05$)[22]. Similarly, in the present study female outpatients expressed both high overall satisfaction and more level of empathy in comparison with male patients. Both studies had alignment in this case.

Patient's satisfaction is an important indicator of health care quality. If there is dissatisfaction among patients, they will not continue their treatment or might receive medical services from other clinics[22]. Patient's satisfaction is associated with different variables such as physician knowledge, communicative skill and patient trust to physician empathy; availability of care, proper location of care provision, continuity of care and cure effectiveness[10,23]. As well as, this study indicated that association between items of the CARE measure and patient's overall satisfaction from medical consultation with recommending physician to relatives were statistically positive. The item" Letting patient tell his story" with patient's overall satisfaction had more strong correlation($r=.59$ $p<.001$). In addition, the item" physician fully understand patient concerns" may have affected more on choice and recommending physician to relatives($r=.49$ $p<.001$) (table.3). This finding had alignment with the results of studies of Aomatsu et al[9] and Bikker et al[6]. In survey of Aomatsu et al. in Japan was found a very strong correlation between score of the CARE measure and patient's overall satisfaction ($r=.74$ $p<.001$). Furthermore, they got positive association between the CARE measure and knowing physician beforehand with recommending physician to relatives[9]. As well as, the study conducted by Bikker et al. on measuring empathy in primary care nurses in Scotland, mean score of the CARE measure had significant and strong association with patient's overall satisfaction ($r=.56$ $p<.001$)[6].

Conclusion:

The findings of present study showed that outpatients' perceived empathy from physicians was at average and high average level. Thus, there is room for improvement of empathy skills during care and consultation process for health care team (especially physicians). Furthermore, the results indicated that although physicians would have listened well to their patients' talks, but they were less able to pay attention to their patient special needs. As well as, the findings of study showed strong association between outpatients overall satisfaction with score of the CARE measure.

With regard to the findings of study, the positive effects of physician empathy on health outcomes[24] and enhancement of

patients' satisfaction, it is necessary that physicians' relational empathy skills as an essential competency for health manpower are upgraded.

Limitations and Future Research

This study has two limitations. First of all, the sample of outpatients was not representative of the population of outpatients in the country. The secondly, the study was took place at hospitals of a university of medical sciences. Both may jeopardize the generalization of the findings. However, the main purpose of this study was to develop an instrument and measure empathic communication during consultation process in outpatient clinics.

It is recommended future researches for generalization of the findings with more representative sample from several university of medical sciences are done.

Despite the above mentioned limitations, our findings can provide an instrument for researchers to measure CARE which is supported by strong psychometric evidence.

Ethical approval: for the study was obtained from the ethical committee of Zanjan University of Medical Sciences (approval code: ZUMS.REC.1395.183).

Authors' contribution

The authors contributed equally to the writing of the article.

Conflict of Interest

There was no conflict of interest.

Reference:

1. Hanževački M, Jakovina T, Bajić Z, Tomac A, Mercer S. Reliability and validity of the Croatian version of Consultation and Relational Empathy (CARE) Measure in primary care setting. Croat Med J. 2015; 56:50-6. Doi:10.3325/cmj.2015.56.50.

2. Eikeland HL, Ørnes K, Finse A, Pedersen R. The physician's role and empathy – a qualitative study of third year medical students. BMC Medical Education 2014, 14:165.

3. Grosseman S , Novack D H , Duke P, Mennin S, Rosenzweig S , Davis TJ, Hojat M. Residents' and standardized patients' perspectives on empathy: Issues of agreement. Patient Education and Counseling, 2014; 96:22-28.

4. Hojat M, Louis D Z, Maxwell K, Markham F, Wender R, Gonnella J S. Patient perceptions of physician empathy, satisfaction with physician, interpersonal trust, and compliance. International Journal of Medical Education. 2010; 1:83-87. DOI: 10.5116/ijme.4d00.b701

5. Quince T A, Parker R A, Wood D F, Benson J. Stability of empathy among undergraduate medical students: A longitudinal study at one UK medical school. BMC Medical Education 2011, 11:90.

6. Bikker A P, Fitzpatrick B, Murphy D, Mercer S W. Measuring empathic, person-centered communication in primary care nurses: validity and reliability of the Consultation and Relational Empathy (CARE) Measure. BMC Family Practice (2015) 16:149. DOI 10.1186/s12875-015-0374-y

7. Mukhtar F, Anjum A, Bajwa MA, Shahzad S, Hamid S, Masood Z, Mustafa R. Patient satisfaction; OPD services in a Tertiary Care Hospital of Lahore. Professional Med J 2013; 20(6): 973-980.

8. Merser, S.W., Maxwell, M., Heaney, D. and Watt, G.C. The consultation and relational empathy (CARE) measure: Development and preliminary validation and re- liability of an empathy-based consultation process measure. Family Practice, 2004; 21: 699-705.

9. Aomatsu M, Abe H, Abe K, Yasui H , Suzuki T, Sato J, Ban N, Mercer S W. Validity and reliability of the Japanese

version of the CARE Measure in a general medicine outpatient setting. Family Practice, 2014, Vol. 31, No. 1, 118–126. doi:10.1093/fampra/cmt053.
10. Lundy J-M, Bikker A, Higgins M, Watt G C, Little P, Humphries G M , Mercer S W. General practitioners' patient-centeredness' and responses to patients' emotional cues and concerns: relationships with perceived empathy in areas of high and low socioeconomic deprivation. Journal of Compassionate Health Care (2015) 2:2. DOI 10.1186/s40639-015-0011-6
11. Berg K, Blatt B, Lopreiato J, Jung J, Schaeffer A, Heil D, Owens T, Carter-Nolan P L, Berg D, Veloski J, Darby E, Hojat M. Standardized Patient Assessment of Medical Student Empathy: Ethnicity and Gender Effects in a Multi-Institutional Study. Academic Medicine. 2015; 90:105–111.
12. Mercer SW, Hatch DJ, Murray A, Murphy DJ, Eva KW. Capturing patients' views on communication with anesthetists: the CARE Measure. Clinical Governance: An International Journal.2008; 13(2): 128-137. DOI 10.1108/14777270810867320.
13. Hojat M, Louis D Z., Maio V, Gonnella J S. Empathy and Health Care Quality. American Journal of Medical Quality, 2013; 28(1): 6 –7.
14. Krowinski W, Steiber S. Measuring patient satisfaction. Chicago: American Hospital Publishing, 1996.
15. Hojat M, Louis D Z, Maxwell K, Markham F, Wender R, Gonnella J S. A Brief Instrument to Measure Patients' Overall Satisfaction with Primary Care Physicians. Family Medicine. 2011; 43(6):412-7.
16. Mostafa A, Hoque R, Mostafa M, Rana M, Mostafa F. Empathy in Undergraduate Medical Students of Bangladesh: Psychometric Analysis and Differences by Gender, Academic Year, and Specialty Preferences. ISRN Psychiatry, 2014.
17. Bryman Alen, Social research methods. Oxford university press, UK, 2016 .
18. Tsai SL, Chai S, Wang H H. Patient-perceived empathy from nurses in Taiwan acute care settings. Open Journal of Nursing, 2013; (3): 532-538.
19. Hana A, Martin R. Quality of primary health care in Saudi Arabia: A comprehensive review. International Journal of Quality Health Care 2005; 17:331–46.
20. Mercer SW, McConnachie A, Maxwell M, Heaney D, Watt GC. Relevance and practical use of the Consultation and Relational Empathy (CARE) Measure in general practice. . *Family Practice*. 2005; 22:328-34.
21. Uddin MJ, Ashrafun L and Kubra TJ. Patient Satisfaction with Doctors' Care in Bangladesh: A Case of Government Hospital. Journal of Family Medicine, 2017; 4(6):1-6.
22. Şahin BB, Görpelioğlu S, Hülya Yıkılkan H, Akbıyık D, Aypak C. Reliability and Validity of Turkish Version of Scale of Patient Overall Satisfaction with Primary Care Physicians. Turkish Journal of Family Medicine and Primary Care, 2017; 11(3): 159-163.
23. Park KH, Roh H, Suh D H, Hojat M. Empathy in Korean medical students: Findings from a nationwide survey. Medical Teacher, 2015; 37(10):943-86. Doi: 10.3109/0142159X.2014.956058.
24. Williams, B., Brown, T., McKenna, L., Palermo, C., Morgan, P., Nestel, D., et al. Student empathy levels across 12 medical and health professions: an interventional study. Journal of Compassionate Health Care, 2015; 2(4): 7-12.

Please cite this article as:

Ali Mohammadi, Koorosh Kamali. Empathic communication in outpatient clinics: validity and reliability of Consultation and Relational Empathy (CARE) Measure in Iran . Int J Hosp Res. 2020;9 (2).