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"Doctor-patient relationship and its influence on the outcomes: what is the importance of emotional intelligence when approaching the patient?"

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To my grandmother Clarinha,

who would have loved to see the conclusion of this journey

Doctor-patient relationship and its influence on the outcomes: what is the importance of emotional intelligence when approaching the patient?

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ACRONYMS AND ABBREVIATIONS

ARS Centro – Administração Regional de Saúde do Centro

DPR – Doctor-Patient Relationship

KMO – Kaiser-Meyer-Olkin

MEPS – Medical Expenditure Panel Survey

NOCs – Normas de Orientação Clínica

PDDR – Patient-Doctor Depth of Relationship

PEI – Patient Enablement Instrument

SEDI – Socioeconomic Index

SPSS – Statistical Package for the Social Sciences

UNESCO – United Nations Educational, Scientific and Cultural Organization

USF – Unidade de Saúde Familiar

RESUMO

Introdução: A relação médico-doente é o pilar da prática clínica. Promover o processo de decisão partilhada, a inteligência emocional, o cuidado centrado no doente e a boa comunicação através das consultas médicas origina outcomes positivos e a melhoria futura da saúde do doente.

Objetivo: Verificar a correlação entre a relação médico-doente e os outcomes da consulta médica, recorrendo aos questionários Patient-Doctor Depth of Relationship Scale (PDDR) e Patient Enablement Instrument (PEI).

Métodos: Após o processo da adaptação cultural do questionário PDDR para português, através da tradução, verificação linguística e retro tradução para inglês, foram aplicados ambos os questionários (PDDR e PEI) a 81 doentes, depois da sua consulta médica, numa Unidade de Saúde Familiar (USF). Foram também recolhidas informações de contexto, como o sexo, a idade, a residência individual ou partilhada, a escolaridade, o rendimento mensal e se a consulta tinha sido realizada com o médico habitual.

Resultados: O PDDR demonstrou boa compreensibilidade e aceitabilidade, assim como uma forte consistência interna (α de Cronbach=0.785; Coeficiente de correlação intraclasse=0.785). Um total de 81 doentes participou no estudo, sendo a maioria do sexo feminino (70.4%). Verificou-se uma diferença significativa na pontuação total do PDDR dependendo se a consulta tinha ou não sido com o médico habitual (p<0.001). Constatou-se uma correlação positiva muito fraca não significativa entre os valores totais de PDDR e SEDI (ρ=0.030; p=0.790) e uma correlação negativa moderada significativa entre a pontuação total do PDDR e do PEI (ρ=-0.396; p<0.001).

Conclusão: Foi realizada a adaptação cultural do questionário PDDR para português, que provou ser uma medida adequada da relação médico-doente, permitindo demonstrar que quanto mais forte era a relação médico-doente, mais capacitado se sentia o doente após a consulta.

Palavras-Chave: Relação médico-doente, Patient-Doctor Depth of Relationship Scale (PDDR Scale), Patient Enablement Instrument (PEI), capacitação, outcomes na saúde

ABSTRACT

Background: The patient-doctor relationship is the cornerstone of medical practice. Promoting shared decision-making, emotional intelligence, patient-centred care, and good communication through medical appointments leads to positive outcomes and future patient health improvement.

Objective: To ascertain the correlation between the patient-doctor relationship and the medical appointment outcomes, using the Patient-Doctor Depth of Relationship Scale (PDDR) and the Patient Enablement Instrument (PEI) questionnaires.

Methods: After the cross-cultural adaptation process of the PDDR questionnaire to European Portuguese, through translation, linguistic verification, and reverse translation, both questionnaires (PDDR and PEI) were applied to 81 patients, after their doctor's appointment, in a family health centre. Context information was collected as well, such as gender, age, living status, educational level, monthly income and whether the appointment was with the usual doctor.

Results: The PDDR showed good understandability and acceptability and strong internal consistency (Cronbach's α=0.785; Intraclass correlation coefficient=0.785). A total of 81 patients participated in the study, most of them female (70.4%). There was a significant difference in the PDDR total scores depending on whether the appointment had been with the usual doctor (p<0.001). Both a very weak positive non-significant correlation between PDDR and SEDI total scores (ρ=0.030; p=0.790) and a moderate significant negative correlation between PDDR total score and PEI (ρ=-0.396; p<0.001) were found.

Conclusion: The cross-cultural adaptation of the PDDR questionnaire to European Portuguese was carried out and proved to be a reasonable measure of the patient-doctor relationship, which allowed to demonstrate that the stronger the patient-doctor relationship was, the more enabled the patient felt after the appointment.

Keywords: Doctor-patient relationship, Patient-Doctor Depth of Relationship Scale (PDDR Scale), Patient Enablement Instrument (PEI), enablement, health outcomes.

1. INTRODUCTION

Dr Miguel Guimarães, the former President of the Portuguese Medical Association, argues that the doctor-patient relationship (DPR) should be recognized as an intangible heritage by UNESCO for it is the foundation of medical practice [1]. DPR relies on the doctor's knowledge of how to assess and decide what to do in each situation and on the patient's trust that the proposed treatment/course of action is in their best interest [2,3].

Nevertheless, a more significant role is still commonly attributed to the doctor, while the patient is considered the most passive and fragile element [4]. However, the incremental process of shared-decision making has been shown to improve affective-cognitive outcomes, with Rappley [5] advising the DPR as a distributed relational entity, as opposed to a single, isolated encounter. This will strengthen their bond, promoting the patient's intervention and autonomy. Additionally, it decreases the likelihood of regretting any decisions, encouraging a more active role in the treatment, and leading to a successful clinical practice [6,7]. Hughes et al [8] proved, by assessing the patient's rating of shared decision-making and then examining data from the MEPS (Medical Expenditure Panel Survey, a deidentified, publicly available dataset), how essential shared-decision making can be and how strongly it can affect the patient. This study was based on patient-reported physical and mental health ratings, prescription drug usage (statins/HMG-COA reductase inhibitors), use of health services (such as emergency room visits), and healthcare spending.

Studies have shown that prioritizing patient-centred care and communication, by engaging the patients in the conversation, using open-ended questions, not interrupting, and understanding their concerns and expectations, improves their well-being and overall health outcomes [9,10]. Emotional clarity and emotional repair in a fully informed patient are strongly correlated with treatment adherence, which increases by 19% when there is good communication with the physician, proving how important psychological education is [11,12].

Efforts are being made to include the teaching of communication skills in the university curriculum of the Integrated Master's Degree in Medicine [13]. Abilities such as emotional intelligence and empathy, exemplified by perceiving the other's feelings, comprehending emotions, and performing actions that show understanding, are linked to higher-quality care and therefore should also be part of the medical curriculum for all students [14–16].

Street et al [17] proved that patients were more pleased with the medical assistance and more willing to follow treatment recommendations when there was a more in-depth mutual understanding of the treatment goals and benefits. Supporting this, researchers,

in the United States of America, have established that atherosclerotic cardiovascular disease patients that feel enlightened, empowered, and respected by their health providers have better adherence to the standard care treatment regimens (statins and aspirin) [18].

Suboptimal communication has been associated with lower physical and mental health rates, leading to a higher percentage of visits to the emergency department [19]. This impact can be particularly noted in ageing adults with more than five chronic conditions. Studies indicate that the doctor-patient relationship in these cases is significantly lower in quality, therefore not fulfilling the patient's needs [20]. In oncologic patients, communication substantially impacts the diagnostic stage, especially when delivering bad news. Many patients show low expectations regarding contact with the medical team responsible for their follow-up, even though admitting how crucial it could be [21].

If doctors used a method based on patients' values and priorities, it would be easier to motivate them to engage in the treatment plan, with positive results [22]. Patients' principles are seldom reflected in the cardiovascular clinical guidelines (NOCs) released in Portugal between 2011 and 2013. In 75% of the NOCs there is no suggestion related to the inclusion of patients' ideas, concerns, and expectations, therefore compromising patient-centred care, and possibly lowering the medical process's quality [23].

Evaluating the possible correlation between the DPR and the patient's enablement after the doctor's appointment is important since it has been shown to affect patient outcomes. Portuguese studies establish that patients tend to feel more enabled after a doctor's appointment [24,25]. However, there is still no evidence on how the patient-doctor relationship can affect it.

The "Patient-Doctor Depth of Relationship" (PDDR) [26] is a scale specifically designed to measure DPR but not yet adapted or validated for European-spoken Portuguese, which the present study aimed to perform. The knowledge of how DPR influences patient enablement was also intended.

2. METHODS

2.1. PDDR's Cross-Cultural Adaptation

The PDDR's cross-cultural adaptation to European Portuguese began after the author's authorization. It consisted of translating the survey, followed by linguistic verification and reverse translation.

Two current healthcare professionals, unconnected to the study and who were both native in English and European Portuguese, analysed and translated the PDDR scale from its original form (Attachment I) to European Portuguese.

The above-mentioned translation was then examined by a group of experts, whose native languages were both English and European Portuguese. After analysing the translation to the targeted population, the panel selected the most accurate and suitable translation for each topic, with word length and number of words per sentence as criteria, according to the English sense of each sentence.

Once the translation and the linguistic verification were complete, the reverse translation was initiated with the distribution of the PDDR questionnaire to two translators who were not related to the research and were both fluent in English and European Portuguese. No significant differences were identified between this last translation and the original PDDR questionnaire.

After this stage, and for process credibility and assurance of future work's quality, the PDDR was handed out, during the Fall of 2022, to 15 conveniently chosen patients who had a scheduled Family Medicine/General Practice doctor's appointment at the "Unidade de Saúde Familiar" (USF) Infante D. Henrique, in Viseu, Portugal. This allowed the PDDR's internal consistency and reliability ascertainment and the identification of any doubts or criticism the patients might have had, concluding this step.

2.2. Validation Study

The next stage of the research required the Portuguese-adapted version of the Patient-Doctor Depth of Relationship (PDDR) (Attachment II) [26] and the Patient Enablement Instrument (PEI) [27], which had previously been validated for the Portuguese community and had already been implemented (Attachment III).

The PDDR is an eight-item scale, completed by the patient, designed to measure the patient-doctor relational depth. Each item was attributed a score from 1 to 5 (1 – Disagree; 2 – Neither agree nor disagree; 3 – Slightly agree; 4 – Mostly agree; 5 – Completely agree). Using this distribution, a single overall depth of relationship score

can be calculated, which ranges from 8 (no patient-doctor relationship) to 40 (very strong/deep patient-doctor relationship). The PEI questionnaire has six questions that evaluate the patient's enablement after the medical appointment, with 3 possible choice answers. Each of them was attributed a score: 1- Much Better; 2 – Better; 3 - The same/Worse. The total final score can extend from 6 (feeling much better than before the consultation) to 18 (feeling the same/worse than before the consultation).

To fully understand the context of the sample population the following data were gathered anonymously (Attachment IV): gender (feminine or masculine), age group (18 to 34, 35 to 49, 50 to 64, 65 or older), living status (alone or accompanied), educational level (illiterate, primary school, middle school, high school, or college education), monthly income compared to the minimum national wage (more, the same or less) and whether or not the patient had an appointment with the usual doctor.

The socioeconomic index (SEDI) of the sample population was calculated by attributing a score based on: the living status (alone – 1 point; accompanied – 2 points); educational level (illiterate – 1; primary school – 1; middle school - 1; high school – 2; college education – 2); and monthly income (less than minimum wage – 1; minimum wage or higher – 2), being that the total score ranged from 3 to 6.

The number of questions in the surveys determines the sample size. Since PEI has 6 questions and PDDR has 8, there should have been approximately 80 participants in the study, according to Trust Scale Length [28].

This part of the study required the random distribution of both the PDDR and PEI to 81 patients, who were 18 years of age or older. The participants filled in the surveys, in the first few months of 2023, anonymously, at USF Coimbra Sul (located in Coimbra, Portugal), after their Family Medicine/General Practice consultation. All the patients who volunteered to take part in the study should be able to read/hear the explanation about the study before expressing written consent (Attachment V), in order to participate.

The investigator was in the same room as the patients, available to answer any questions or doubts, always ensuring the patients' privacy. This room was far from the doctors' office and doctors at work were not advised that the study was going on. The investigator used an identification card and was assured to always introduce herself when approaching a patient.

This study was granted a favourable issue by the Ethics Committee of the "Administração Regional de Saúde do Centro" (ARS do Centro) (Attachment VI) and by the USFs where the data were collected.

Descriptive and inferential statistics, using the Statistical Package for the Social Sciences (SPSS) 27th version software, were applied. The normality of the numerical variables' distribution was studied by the Kolmogorov-Smirnov test with the Lilliefors correction. Non-parametric tests were used for ordinal and non-normal distributed variables. Fisher's exact test was performed for nominal variables. Correlational tests were also applied.

3. RESULTS

3.1. Cross-Cultural Adaptation and Validation Stage

After the translation, linguistic verification, and reverse translation that composed the PDDR cross-cultural adaptation stage, 15 patients completed a PDDR questionnaire. Of these, 60.0% were female, 20.0% were 65 years of age or older and 93.3% had just had an appointment with their usual doctor. According to the results, the patients were pleased with the questionnaire's layout and found the items easy to understand and answer. Therefore, there was no need to adjust the Portuguese adaptation of the PDDR questionnaire.

The internal consistency was tested using Cronbach's α and the corrected item-total correlation. In this case, Cronbach's α=0.785. The item-total statistic (Table 1) shows that Cronbach's α is lower than 0.785 when any of the items of the PDDR are deleted.

Table 1: Item-total Statistics of the PDDR questionnaire

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. I know this doctor very well	57.19	189.70	0.780	0.750
2. This doctor knows me as a person	57.44	186.70	0.793	0.746
3. This doctor really knows how I feel about things	57.31	189.67	0.839	0.748
4. I know what to expect with this doctor	57.02	189.67	0.894	0.747
5. This doctor really cares for me	56.36	201.96	0.769	0.767
6. This doctor takes me seriously	56.26	207.77	0.578	0.777
7. This doctor accepts me the way I am	56.22	202.20	0.698	0.768
8. I feel totally relaxed with this doctor	56.27	204.90	0.633	0.772

The average measure intraclass correlation coefficient was 0.785 (F (80,640)=4.660, p<0.001).

To find the underlying factorial structure of the PDDR questionnaire it was performed a KMO and Bartlett's test, which determined a KMO value of 0.879 and p<0.001 for Bartlett's test of Sphericity. Item communalities varied from 0.558 for the eighth item to 0.881 for the second item, which yields moderate to high communalities (Table 2). According to the analysis, one single factor explains 61.91% of the total variance.

Table 2: Communalities*

	Initial	Extraction
1. I know this doctor very well	1.000	0.829
2. This doctor knows me as a person	1.000	0.881
3. This doctor really knows how I feel about things	1.000	0.785
4. I know what to expect with this doctor	1.000	0.842
5. This doctor really cares for me	1.000	0.781
6. This doctor takes me seriously	1.000	0.813
7. This doctor accepts me the way I am	1.000	0.688
8. I feel totally relaxed with this doctor	1.000	0.558

*Extraction Method: Principal component analysis

Regarding the PEI questionnaire, the calculated value of Cronbach's α is 0.805. The item-total statistic (Table 3) shows that Cronbach's α is lower than 0.805 when any of the items of the PEI are deleted.

Table 3: Item-total Statistics of the PEI questionnaire

As a result of your visit to the doctor today, do you feel you are…	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. Able to cope with life	20.90	30.99	0.739	0.778
2. Able to understand your illness	21.02	30.67	0.840	0.772
3. Able to cope with your illness	20.99	30.46	0.849	0.770
4. Able to keep yourself healthy	21.00	31.15	0.787	0.778
5. Confident about your health	21.01	30.19	0.805	0.769
6. Able to help yourself	21.10	30.24	0.784	0.770

The average measure intraclass correlation coefficient was 0.805 ($F_{(80,480)}=5.127$, $p<0.001$).

3.2. Epidemiological characterization of the sample population

This study's sample was of n=81 patients, 70.4% (n=57) women.

According to Table 4, there was a significant difference between gender and educational level (p=0.025), with the female participants having a higher level of education. No other significant differences were found for the other studied context variables.

Table 4: Context characterisation of the sample population according to gender

		Gender		Total	p - value
		Female	Male		
Age group	18 to 34	13 (22.8%)	6 (25.0%)	19 (23.5%)	0.319
	35 to 49	20 (35.1%)	6 (25.0%)	26 (32.1%)	
	50 to 64	14 (24.6%)	2 (8.3%)	16 (19.8%)	
	65 or older	10 (17.5%)	10 (41.7%)	20 (24.7%)	
	Total	57 (100.0%)	24 (100.0%)	81 (100. 0%)	
Living status	Alone	10 (17.5%)	4 (16.7%)	14 (17.3%)	0.600
	Accompanied	47 (82.5%)	20 (83.3%)	67 (82.7%)	
	Total	57 (100.0%)	24 (100.0%)	81(100.0%)	
Educational level	Middle school or lower	14 (24.6%)	12 (50.0%)	26 (32.1%)	0.025
	Higher than middle school	43 (75.4%)	12 (50.0%)	55 (67.9%)	
	Total	57 (100.0%)	24 (100.0%)	81 (100.0%)	
Monthly income	Less than minimum wage	13 (22.8%)	5 (20.8%)	18 (22.2%)	0.548
	Minimum wage or higher	44 (77.2%)	19 (79.2%)	63 (77.8%)	
	Total	57 (100.0%)	24 (100.0%)	81 (100.0%)	
Appointment with usual doctor	Yes	24 (42.1%)	6 (25.0%)	30 (37.0%)	0.113
	No	33 (57.9%)	18 (75.0%)	51 (63.0%)	
	Total	57 (100.0%)	24 (100.0%)	81 (100.0%)	

3.3. Descriptive statistics of the PDDR questionnaire

The frequency distribution of PDDR scores for each of the 8 items of the questionnaire can be seen in Table 5.

Considering the table below, 59.3% (n=48) of the patients that participated in the study felt completely accepted and 55.6% (n=45) felt totally relaxed with their doctor.

A total of 19.8% (n=16) of the participants consider that their doctor really knows how they feel about things.

The mean total score of the PDDR questionnaire was 30.3±7.5 [8 to 40].

Table 5 – Frequency distribution of PDDR scores

		Total
1.I know this doctor very well	1 – Disagree	14 (17.3%)
	2 – Neither agree nor disagree	11 (13.6%)
	3 – Slightly agree	10 (12.3%)
	4 – Mostly agree	24 (29.6%)
	5 – Completely agree	22 (27.2%)
	Total	81 (100.0%)
2. This doctor knows me as a person	1 – Disagree	20 (24.7%)
	2 – Neither agree nor disagree	12 (14.8%)
	3 – Slightly agree	11 (13.6%)
	4 – Mostly agree	16 (19.8%)
	5 – Completely agree	22 (27.2%)
	Total	81 (100.0%)
3. This doctor really knows how I feel about things	1 – Disagree	13 (16.0%)
	2 – Neither agree nor disagree	12 (14.8%)
	3 – Slightly agree	15 (18.5%)
	4 – Mostly agree	25 (30.9%)
	5 – Completely agree	16 (19.8%)
	Total	81(100.0%)
4. I know what to expect with this doctor	1 – Disagree	7 (8.6%)
	2 – Neither agree nor disagree	13 (16.0%)
	3 – Slightly agree	14 (17.3%)
	4 – Mostly agree	25 (30.9%)
	5 – Completely agree	22 (27.2%)
	Total	81(100.0%)

		Total
5. This doctor really cares for me	1 – Disagree	0 (0.0%)
	2 – Neither agree nor disagree	5 (6.2%)
	3 – Slightly agree	13 (16.0%)
	4 – Mostly agree	25 (30.9%)
	5 – Completely agree	38 (46.9%)
	Total	81(100.0%)
6. This doctor takes me seriously	1 – Disagree	1 (1.2%)
	2 – Neither agree nor disagree	2 (2.5%)
	3 – Slightly agree	10 (12.3%)
	4 – Mostly agree	28 (34.6%)
	5 – Completely agree	40 (49.4%)
	Total	81(100.0%)
7. This doctor accepts me the way I am	1 – Disagree	1 (1.2%)
	2 – Neither agree nor disagree	6 (7.4%)
	3 – Slightly agree	7 (8.6%)
	4 – Mostly agree	19 (23.5%)
	5 – Completely agree	48 (59.3%)
	Total	81(100.0%)
8. I feel totally relaxed with this doctor	1 – Disagree	0 (0.0%)
	2 – Neither agree nor disagree	5 (6.2%)
	3 – Slightly agree	13 (16.0%)
	4 – Mostly agree	18 (22.2%)
	5 – Completely agree	45 (55.6%)
	Total	81(100.0%)

3.4. Descriptive statistics of the PEI questionnaire

The frequency distribution of PEI scores for each of the 6 items of the questionnaire can be seen in Table 6.

For all 6 questions of the PEI questionnaire, most of the patients chose the answer "Better" (Table 6).

The mean total score of the PEI questionnaire was 11.5±3.0 [6 to 18].

Table 6 - Frequency distribution of PEI scores

As a result of your visit to the doctor today, do you feel you are…		Total
1. Able to cope with life	1 – Much better	14 (17.3%)
	2 – Better	52 (64.2%)
	3 – The same/Worse	15 (18.5%)
	Total	81 (100%)
2. Able to understand your illness	1 – Much better	18 (22.2%)
	2 – Better	54 (66.7%)
	3 – The same/Worse	9 (11.1%)
	Total	81(100.0%)
3. Able to cope with your illness	1 – Much better	17 (21.0%)
	2 – Better	53 (65.4%)
	3 – The same/Worse	11 (13.6%)
	Total	81(100.0%)
4. Able to keep yourself healthy	1 – Much better	16 (19.8%)
	2 – Better	56 (69.1%)
	3 – The same/Worse	9 (11.1%)
	Total	81 (100.0%)
5. Confident about your health	1 – Much better	21 (25.9%)
	2 – Better	47 (58.0%)
	3 – The same/Worse	13 (16.1%)
	Total	81 (100.0%)
6. Able to help yourself	1 – Much better	26 (32.1%)
	2 – Better	44 (54.3%)
	3 – The same/Worse	11 (13.6%)
	Total	81 (100.0%)

3.5. Group statistics

The Kolmogorov-Smirnov test with the Lilliefors correction revealed that the PDDR, SEDI and PEI total scores did not follow a normal numeric distribution ($p<0.05$). Therefore, non-parametric statistics were used, namely Mann-Whitney U, Kruskal-Wallis and Spearman correlation.

According to Table 7, when grouping PDDR total scores based on gender, living status, educational level, or monthly income, no significant differences among the group medians were found (p>0.05, Mann-Whitney test). The same was true for the age group (p>0.05, Kruskal-Wallis test). However, when grouping PDDR total scores based on whether the appointment was with the usual doctor or not, the group medians were significantly different: 33.8±5.5 [8 to 40] vs 24.2±6.4 [8 to 40] (p < 0.001, Mann-Whitney test).

Table 7 – PDDR total score according to the context of the sample population

	PDDR Total Score
Gender	p=0.203
Age group	p=0.135
Living status	p=0.866
Educational level	p=0.792
Monthly income	p=0.864
Appointment with usual doctor	p<0.001

Spearman's correlation between the PDDR total score and the SEDI and PEI total scores is shown in Table 8. A significant moderate negative correlation between the PDDR and PEI total scores can be seen, as well as a very weak positive non-significant correlation between PDDR and SEDI total scores.

Table 8 – Spearman correlation of PDDR total score with SEDI and PEI total scores

	PDDR Total Score	
	Spearman's ρ	p-value
SEDI Total Score	ρ=0.030	p=0.790
PEI Total Score	ρ=-0.396	p<0.001

4. DISCUSSION

4.1. Cross-Cultural Adaptation and Validation Stage

The internal consistency represents the homogeneity of the items. In this study, the internal consistency of the PDDR questionnaire was good, with a Cronbach's α of 0.785 (Cronbach's α>0.7). This means that the 8 items of the survey produce similar scores. The item-total statistics of the PDDR questionnaire showed high reliability since, according to Table 1, the value of Cronbach's α would have been lower than 0.785 in case any of the items were deleted, showing that all the items were essential for the survey and none of them should have been disposed of. The intraclass correlation coefficient of 0.785 (0.75<ICC<0.90) showed high reliability as well.

The KMO value over 0.5 (KMO value=0.879) and Bartlett's test below 0.05 (Bartlett's test<0.001) suggest there is a substantial correlation in the data.

According to Table 2, item communalities varied from 0.558 to 0.881, representing moderate to high communalities, meaning that the extracted factors account for a substantial proportion of the variable's variance. One factor represents 61.91% of the total variance.

The same analysis was made for the PEI questionnaire, which had a calculated Cronbach's α value of 0.805, therefore assuring good internal consistency (Cronbach's α>0.7). According to Table 3, the value of Cronbach's α would have been lower than 0.805 if any of the 6 items of the PEI survey were removed. This in addition to an intraclass correlation coefficient of 0.805 (0.75<ICC<0.90) demonstrates that the PEI questionnaire is highly reliable.

4.2. Epidemiological characterisation of the sample population

The study's sample population for the validation stage was fully retrieved from USF Coimbra Sul. Even though our data source was one single family health centre, it seemed to be consistent with the average Portuguese population distribution [29], with more female (70.4%) than male (29.6%) patients going to doctor's appointments in a health centre (Table 4).

Patients were studied according to gender and five different context characteristics: age group, living status, educational level, monthly income and whether the appointment was with the usual doctor. Either the Fisher's exact test or Mann–Whitney U test was used to calculate the statistical significance between each context characteristic and gender. There was no significant difference between gender and age group (p=0.319),

living status (p=0.600), monthly income (p=0.548) or whether the appointment was with the usual doctor (p=0.113).

However, there was a significant difference between gender and educational level (p=0.025), with female participants having a higher level of education. This appears to be consistent with the higher percentage of female students that enrol in college education in Portugal [30].

4.3. PDDR questionnaire

After finishing the PDDR questionnaire translation and cross-cultural adaptation to European Portuguese, the survey was distributed to 81 patients. According to Table 5, 59.3% of the patients that participated in the study felt completely accepted and 55.6% felt totally relaxed next to their doctor. A percentage of 19.8% of the participants believed their doctor really knows how they feel about things. This may imply that most patients felt comfortable and at ease with their doctor, but only a minority of the study's participants were completely honest and open about their feelings.

The PDDR's total score can range from 8 to 40. The higher the score, the better the DPR is. The mean total score of the questionnaire was 30.3, with 54.3% of the patients scoring higher. It is possible that these results come to be improved once doctors are aware of them.

4.4. PEI questionnaire

According to Table 6, for all 6 items, most of the patients chose the answer "Better", revealing patients tended to feel more enabled after the doctor's appointment.

The item with the less positive score was "1. As a result of your visit to the doctor today, do you feel you are able to cope with life", which had the lowest amount of "Much better" answers and the highest amount of "The same/Worse" answers. On the other hand, 69.1% of the patients felt more able to keep themselves healthy after the doctor's appointment. Thus, despite most of the patients feeling more motivated, after the physician's appointment, to maintain themselves in good health, they tend not to notice significant improvements in their ability to cope with life. It is possible that Patient-Centred consultations could be a key element and contribute to a change in these results.

The total score of the PEI questionnaire can range from 6 to 18. The lower the score, the more enabled the patient feels. The mean total score of the PEI questionnaire of 11.5, with 76.5% of the sample below it, corroborates the results presented in Table 6.

4.5. Group statistics

According to Table 7, PDDR results according to gender and SEDI did not reveal any significant differences. Therefore, the gender, living status, educational level and monthly income of the patients do not seem to be correlated to the depth of the doctor-patient relationship, meaning that family doctors can achieve good relations with patients from all socio-economic statuses.

When analysing the PDDR scores for whether the appointment was with the usual doctor or not, a significant difference was revealed. The patients that had an appointment with their usual doctor had higher PDDR total scores (33.8±5.5 [8 to 40]) than the ones who did not (24.2±6.4 [8 to 40]), p<0.001. This suggests that people have a deeper relationship with their usual doctor, showing that a continuous relationship can be advantageous.

According to Table 8, a significant negative correlation between the PDDR and PEI total scores was found (p<0.001), meaning that a stronger DPR correlates to higher patient enablement.

For future validation, larger samples, including patients from several healthcare centres, would assure a more varied epidemiologic response. Concurrent validity with other instruments, such as the ones from Patient-Centered Medicine, is deemed necessary.

4.6. Study limitations

The sample size and the validation study performed in one single primary health centre (USF Coimbra Sul) may limit the results.

The misleading belief that these questionnaires might be a way for the patients to evaluate their doctor, could have influenced the final scores.

The fact that the patients are in the same physical space as their physician may also cause some indirect pressure and lead to different answers (social-desirability bias).

5. <u>CONCLUSION</u>

The cross-cultural adaptation of the PDDR questionnaire to European-spoken Portuguese and to its population was successfully carried out and it represented a reasonable measure of the patient-doctor relationship's depth.

In the validation process, 54.3% of the study's sample considered having a good relationship with their doctor after the appointment, but it was significantly better with the usual doctor.

It was also proved that 76.5% of the patients that participated in the study felt better and more enabled after the medical consultation.

The deeper the patient-physician relationship was, the more enabled the patient felt after the consultation.

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Attachment I

Original Patient-Doctor Depth of Relationship (PDDR) Scale (in English)

Thinking about the doctor you have just seen, please answer the following questions as honestly as possible by ticking the box that best fits with your opinion.

		Disagree	Neither agree nor disagree	Slightly agree	Mostly agree	Totally agree
2.1	**I know** this doctor very well	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
2.2	This doctor knows me **as a person**	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
2.3	This doctor really knows **how I feel** about things	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
2.4	I know **what to expect** with this doctor	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
2.5	This doctor **really cares** for me	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
2.6	This doctor **takes me seriously**	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
2.7	This doctor **accepts me** the way I am	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$
2.8	I feel **totally relaxed** with this doctor	$\square_0$	$\square_1$	$\square_2$	$\square_3$	$\square_4$

Portuguese-adapted version of the Patient-Doctor Depth of Relationship Scale

Pensando no médico com quem teve consulta, por favor, responda às seguintes questões da forma mais honesta possível, marcando a caixa que melhor se adeque à sua opinião.

	Discordo ☹	Não concordo nem discordo 😐	Concordo ligeiramente ☺	Concordo na maior parte ☺	Concordo totalmente 😄
Conheço muito bem este médico					
Este médico conhece-me como pessoa					
Este médico sabe mesmo como eu me sinto sobre as coisas					
Eu sei o que esperar deste médico					
Este médico importa-se mesmo comigo					
Este médico leva-me a sério					
Este médico aceita-me como sou					
Sinto-me totalmente à vontade com este médico					

Attachment III

<u>Portuguese validated version of Patient Enablement Instrument</u>

	Muito melhor	**Melhor**	**Igual ou pior**
Capaz de lidar com a vida	❏	❏	❏
Capaz de compreender a sua doença	❏	❏	❏
Capaz de lidar com a sua doença	❏	❏	❏
Capaz de se manter saudável	❏	❏	❏
	Muito mais	**Mais**	**Igual ou menos**
Confiante em relação à sua saúde	❏	❏	❏
Capaz de se ajudar a si próprio	❏	❏	❏

<u>Context Information Form</u>

Informação de Contexto

As suas respostas são completamente confidenciais, ninguém saberá quem respondeu nem o que respondeu, pelo que pedimos que responda honestamente. Poderá desistir a qualquer momento, sem que com isso seja prejudicado(a).

Agradecemos o seu tempo e as suas respostas.

Sexo:

Feminino

Masculino

Idade:

18 a 34 anos

35 a 49 anos

50 a 64 anos

Mais de 65 anos

Vive:

Só

Acompanhado

Grau de Escolaridade

Não sabe ler nem escrever

Ensino primário (até ao 4º ano, inclusive)

Ensino Básico (até ao 9º ano, inclusive)

Ensino Secundário (até ao 12º ano, inclusive)

Superior

Rendimento mensal

Inferior ao salário mínimo nacional

Igual ou superior ao salário mínimo nacional

<u>Informed Consent Form</u>

CONSENTIMENTO

       É convidado a participar num estudo observacional transversal para conhecimento da **"Relação médico-doente e a sua influência na evolução do prognóstico: qual a importância da inteligência emocional na abordagem ao doente?".** O questionário leva 3 minutos a preencher em anonimato, confidencialidade e sigilo, pedindo os autores que responda honestamente. Mas solicitam os autores que dê consentimento a que os seus dados sejam tratados em conjunto com os dos restantes participantes. Esteja à vontade para cessar o preenchimento quando deseje, desde já sabendo que nenhum problema lhe acontecerá se responder ou não.

Data: ____/____/_____

Assinatura do participante: _____

Assinatura do investigador: _____

Attachment VI

Authorisation of the Ethics Committee of the ARS Centro

GOVERNO DE **PORTUGAL**
MINISTÉRIO DA SAÚDE

ARSC ADMINISTRAÇÃO REGIONAL DE SAÚDE DO CENTRO, I.P.

COMISSÃO DE ÉTICA PARA A SAÚDE

PARECER FINAL: FAVORÁVEL	DESPACHO: *[handwritten text]* 18012023

Conselho Directivo da A.R.S. do Centro, I.P.

ASSUNTO:	Estudo 95/2022
	Relação médico-doente e a sua influência na evolução do prognóstico: qual a importância da inteligência emocional na abordagem ao doente?

Dr. Mário Ruivo
Vogal,

Foram fornecidos os esclarecimentos necessários e a metodologia foi corrigida

Dr. Fernando Cravo
Vogal,

Coimbra, 18 de janeiro de 2023

Pel'o Relator: Prof. Doutor Vitor Rodrigues   O Presidente da CES: Prof. Doutor Fontes Ribeiro

Assinado por: CARLOS ALBERTO FONTES RIBEIRO
Num. de Identificação: BI030073278
Data: 2023.01.19 14:46:42+00'00'

CARTÃO DE CIDADÃO