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# Doctors who consider practicing patient centered care present greater resistance from psychological stress

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*"O mal de quem apaga as estrelas é não se lembrar de que não é com candeias que se ilumina a vida"*

Miguel Torga

## Índex

## Abbreviations

**IOM:** Institute of medicine

**PCC:** Patient-centered care

**USF:** Family health unit

**UCSP:** Personalized health care unit

**PCM:** Patient centered medicine

**23-QVS:** Stress vulnerability questionnaire

## Abstract

**Background:** Patient centered care can be defined as the provision of medical care that meets the needs and expectations of each patient, including him in making therapeutic decisions, always based on clinical information duly executed by the physician. It is therefore an innovative method, and has been proven in several studies, that its application favors patients, increasing for example their adherence to therapy.
Of course, its application depends on health professionals whose physical and mental health should be a concern, since, as international studies show, the medical profession is considered a risk group for the development of mental illness.

**Objectives:** The aim of this study is to understand if doctors who consider practicing patient centered care present greater resistance from psychological stress.

**Methods:** We performed an observational, cross-sectional study with a non-probabilistic, convenience sample of doctors of family health units in the Coimbra and Braga districts. The applied instrument consisted of the epidemiologic one and PCM and 23-QVS questionnaires and it was applied to 62 doctors between July and September 2016. The data was analyzed using both descriptive and inferential statistics.

**Results:** A sample of 62 doctors, mostly female (61.3%), aged between 36 and 65 years old (54.8%), working in USF (74.2%) and not taking medication regularly (62.9%) was studied. No statistically significant differences were found between PCM and 23-QVS values; however, a linear regression shows a decreasing of the 23-QVS value as the one of PCM increases.

**Conclusions:** In this study sample, most respondents believe that they practice patient-centered medicine; the overwhelming majority of physicians have low levels of vulnerability to stress and there is a slight correlation, although with no statistical significant difference, between PCM and 23-QVS.

**Keywords:** Patient-centered medicine; psychological stress; general practice

**Resumo**

**Introdução:** A medicina centrada no paciente pode ser definida como a prestação de cuidados médicos que vai de encontro às necessidades e expectativas de cada paciente, incluindo-o na tomada de decisões terapêuticas, sempre com base em informações clínicas devidamente facultadas pelo médico. Trata-se, portanto, de um método inovador, tendo ficado provado em vários estudos que a sua aplicação favorece os pacientes, aumentando, por exemplo, a sua adesão à terapêutica.

Claro está que a sua aplicação depende dos profissionais de saúde cuja saúde física e mental deve ser uma preocupação, uma vez que, como mostram estudos internacionais, a profissão médica é considerada um grupo de risco para o desenvolvimento de doenças mentais.

**Objectivos:** O objectivo deste estudo é perceber se os médicos que consideram praticar medicina centrada no paciente apresentam maior resistência ao *stress* psicológico.

**Métodos:** Foi realizado um estudo observacional, transversal, com uma amostra não probabilística e de conveniência de médicos das unidades de saúde familiar nos distritos de Coimbra e Braga; o instrumento utilizado alia o questionário epidemiológico e os questionários PCM e 23-QVS e foi aplicado a 62 médicos entre Julho e Setembro de 2016. Os dados foram analisados com estatística descritiva e inferencial.

**Resultados:** Foi estudada uma amostra de 62 médicos, a maioria mulheres (61,3%), com idade entre 36 e 65 anos (54,8%), trabalhando em USF (74,2%) e não tomando medicação regularmente (62,9%). Não foram encontradas diferenças estatisticamente

significativas entre os valores de PCM e 23-QVS; No entanto, uma regressão linear mostra uma diminuição do valor do 23-QVS à medida que o valor do PCM aumenta.

**Conclusão:** Na amostra estudada, a maioria dos entrevistados acredita praticar medicina centrada no paciente; a esmagadora maioria dos médicos apresenta baixos níveis de vulnerabilidade ao *stress* e há uma ligeira correlação, embora sem diferença estatisticamente significativa, entre o PCM e o 23-QVS.

**Palavras-chave:** Medicina centrada no paciente; *stress* psicológico; medicina geral e familiar

## Introduction

The face of Medicine is constantly changing as is the role clinics adopt in the treatment of their patients. Only a few years ago, much of what we had to offer was compassion and understanding.[1] The truth is, scientific development associated with the requirement for greater and a more rigorous capacity for information, coined the doctor-patient relationship with a unidirectional character, merely assertive.[2]

Prior to this, several studies had been conducted to analyse and understand clinical results and the consequences of adopting a different medical practice, focused on the patients' preferences. A randomised study conducted in the U.S.A. with the aim of determining the patients' preference for the type of clinical practice adopted concluded that 69% of respondents prefer to have a say when it comes to their treatment.[3] Hence, patient centered care is preferred over a biomedical one. The same study also concluded that even patients who initially preferred a more conservative approach had better clinical results after being more involved in their own decision making and treatment.[3]

Patient centered care can be defined as the provision of medical care that meets the values, needs and preferences of patients, which includes making an informed decision based on clinical evidence proposed by the clinic.[4]

The patient centered care was defined by the Institute of Medicine (IOM) so that care is respectful of, and responsive to, individual patient preferences. This ensures that patients' values guide all clinical decisions. "Since the Institute of Medicine (IOM) put forth PCC as one of its six objectives for improving health care in the 21st century (IOM, 2011), many health care organizations have embraced the notion of PCC as central to their strategic missions and values."[5]

The current practice of patient centered care demands more from each clinic to adapt to the needs of the communities they serve. Therefore, with this in mind, the clinics are being rated according to their ability to adapt to the standards imposed by the patients.[6]

"Future healers will need to be self-aware, empathetic and appreciative of the opportunity to care for the sick and the vulnerable."[2]

It is also, therefore, easy to understand that clinics are increasingly obliged to show professionalism and perfectionism and are being constantly evaluated by both their patients and their superiors.[7] For this reason and in association with other factors, such as excessive hours of work, lack of opportunity to sleep due to the excessive hourly load and the current organisation of working shifts[8], the medical staff are more susceptible and more prone to suffer from psychological stress when compared to the population at large.

A recent study conducted in 2016 concluded that "doctors are still at risk"[9] when it comes to develop physical and mental health problems related to stress. Furthermore, psychological stress undesirably affects decision-making, memory and attention in this manner, impacting upon the provision of safe and high quality patient care[9].

Having this in consideration, and assuming as true the existence of a relation between the well-being of doctors and the quality of medical care given to patients, the objective of this study is to answer the following question: "are doctors who consider practicing patient centered care more resistant to psychological stress?" It is expected that this project will demonstrate that doctors who consider practicing patient centered care present greater resistance from psychological stress.

## Methods

We performed an observational, cross-sectional study with a non-probabilistic, convenience sample of doctors of family health units in the Coimbra and Braga districts: USF Topázio (Eiras), UCSP de Celas (Coimbra), USF Marquês de Marialva (Cantanhede), USF Trevim-Sol (Lousã), UCSP Terra Verde (Pico de Regalados), USF Vida Mais (Vila Verde), USF Prado (Prado) and USF Carandá (Braga).

The PCM questionnaire is a brief and easy-to-apply instrument, which evaluates the perception of doctors - (as if they were the patient) -, about their own medical appointment.

The Questionnaire consists of 12 items to be answered "No", "In part" or "Yes" items, 1- Could I talk about what I felt and about the reasons that brought me to the consultation?; 2- Was I able to talk about my fears and my hopes for my problems?; 3- Did I feel that the doctor cares about me, my family, and my living conditions?; 4- Did I feel that the treatment process will be carried out together, existing a collaboration between me and my doctor?; 5- Did I understand the objectives, methods and possibilities in relation to the "treatment" chosen?; 6- Did I realize the importance of complying with the indications for a correct "treatment" and that results?; 7- Did I realise what should be done to avoid "getting worse"?; 8- Did I agree to do what I was asked to do to improve?; 9- Did I feel that the doctor was interested in helping me to solve my problem?; 10- Did I understand that the success of the treatment depends on me as a patient and other professionals who work with my doctor?; 11- Did the appointment with the doctor last as long as needed?; 12- Did this appointment with the doctor happened at the right time?

It also included four other items: age (≤35 years, [36, 65] and >65); sex; work place (UCSP or USF) and the question "Do you take any medication regularly?" with a "Yes" or "No" answer.

Bearing in mind that the objective of this study was to identify if there was a cause-effect relation between practicing patient centered care and presenting greater resistance from psychological stress, the 23-QVS, a questionnaire of stress vulnerability, was applied. It is an instrument of self-assessment with the fundamental objective of evaluating the psychological vulnerability that each individual demonstrates. It is a unidimensional scale, conceived with the notion that, the higher the global note, the higher the probability of an individual to react in an inappropriate way meaning a stressful trigger.[10]

Consisting of 23 items: 1- I'm a determined person in solving my problems; 2- I have a hard time connecting to people I do not know; 3- When I have problems that bother me, I can count on one or more friends who serve as confidants; 4- I usually have money to meet my personal needs; 5- I easily care about the day-to-day setbacks; 6- When I have a problem to solve, I usually have someone who can help me; 7- I give and receive affection regularly; 8- It's rare to let myself be overwhelmed by the unpleasant events that come to mind; 9- In the face of day-to-day difficulties, I am more to complain than to strive to resolve them; 10- I'm an easygoing person; 11- In most cases the solutions to the important problems of my life do not depend on me; 12- I tend to feel guilty when I am criticized; 13- People only give me attention when they need me to do something to their advantage; 14- I dedicate more time to requests from others than to my own needs; 15- I'd rather keep my opinion to myself than contradict someone, even if he is wrong; 16- I get nervous and upset when I don't do my chores as well as I expected to; 17- There are in me unpleasant aspects that lead to the alienation of other people; 18- It is difficult for me to openly express what I feel; 19- I get nervous

and upset if I don't immediately get what I want; 20- I am a type of person who, due to the sense of humor, is able to laugh at the unpleasant events that occur to me; 21- My salary is not enough to cover the essential expenses; 22- Faced with the problems of my life I tend to ignore them rather than to solve them.; 23- I feel bad when I'm not perfect at what I do. It's used a *Likert's* scale to respond to the questionnaire, from 1 (totally agree) to 5 (totally disagree). Good PCM was considered for those with core values greater than the median. The 23-QVS total score was calculated considering non vulnerability for values less than 43.

The applied instrument consisted of an epidemiologic one and PCM and 23-QVS.

The Ethics Committee of the Regional Health Administration of the Center granted positive opinion and this work also received the authorization of the USFs and UCSPs, through their representatives.

Data collection took place during the months of July, August, September and October 2016. Each primary health care unit received a sufficient number of questionnaires to distribute to the respective doctors. All the completed questionnaires were delivered in an envelope, thus ensuring anonymity.

After the elaboration of the database in Excel, the treatment of the collected data was made using the SPPS Software for Windows – version 19.0 (SPPS Inc., Chicago, IL). Descriptive and inferential statistics analyses – parametric and non-parametric tests - were performed after verification of data normality. A value of $p<0.005$ was defined as statistically significant.

## Results

### Sample's characteristics

Table 1 presents the characteristics of the sample under study regarding the age group, sex, workplace and regular medication.

The sample consists of 62 general doctors, of which 74,2% work in USF and 25,8% in UCSP. Regarding the sex, the sample includes 38 women (61,3%) and 24 men (38,7%). Concerning the age group, the sample was divided into 3 groups: 35 or fewer years, with 26 physicians; 36 to 65 years with 34 physicians (54,8%) and 66 or more years with 2 physicians (3,2%). Finally, 23 (37,1%) answered that they were taking medication, while 39 (62,9%) answered that they did not.

| | **n (%)** |
|---|---|
| **Sex** | |
| **Male** | 24 (38,7%) |
| **Female** | 38 (61,3%) |
| **Age group** | |
| **≤ 35 years old** | 26 (41,9%) |
| **36 to 65 years old** | 34 (54,8%) |
| **≥ 66 years old** | 2 (3,2%) |
| **Workplace** | |
| **USF** | 46 (74,2%) |
| **UCSP** | 16 (25,8%) |
| **Regular medication** | |
| **Yes** | 23 (37,1%) |
| **No** | 39 (62,9%) |

**Table 1:** Characteristics of the sample, to n=62

Patient centered care was believed to be performed by 36 doctors (58,0%), while 26 others (42,0%) answered that they did not. The scale's mean was 32,3±3,5, with a minimum value of 22 and a maximum of 36.

For psychological stress vulnerability, 54 of the questioned doctors (87,1%) scored less than 43, meaning they are less vulnerable to psychological stress, according to Vaz Serra, while 8 (12,9%) are classified as vulnerable to psychological stress. At a possible score of zero to 92, the scale's mean was 33,2±10,5, with a minimum value of 6 and a maximum of 60.

There are no significant differences in the means of 23-QVS and PCM.

Table 2 presents the mean of the relative values of each of the factors considered by Vaz Serra, obtained using the 23-QVS Quotation Program.

| | F1 | F2 | F3 | F4 | F5 | F6 | F7 |
|---|---|---|---|---|---|---|---|
| **Mean** | 2,4 | 0,8 | 0,5 | 0,2 | 1,6 | 1,6 | 0,5 |
| **Standard deviation** | 1,0 | 0,8 | 0,8 | 0,8 | 0,9 | 0,9 | 0,8 |

**Table 2:** Mean of the 23-QVS's factors

The highest value obtained is for F1 (perfectionism and frustration intolerance), which means that it is the personality of the individual that contributes most to the greater or less vulnerability to stress. Factor 4 (Adverse living conditions) was the one that obtained the lowest score, meaning this is the factor with the least one to vulnerability to stress.

## Statistical Analysis

Sex, age group, workplace and regular medication

There are no statistically significant differences in the distribution by sex (p=0,424), age group (p=0,825) and regular medication (p=0,363) considering the workplace.

PCM

The analysis of the variables data showed a normal distribution.

There were no statistically significant differences when PCM values were interrelated to regular medication (p = 0.265). However, for those who admit being medicated present a higher mean (33.0) than those who do not take medications regularly (31,9).

For sex, there are also no statistically significant differences (p = 0.846), the means being similar: 32.2 for women and 32.4 for men.

| | PCM | |
|---|---|---|
| | **Mean** | **p value** |
| **Regular medication** | | |
| Yes | 33,0±3,1 | 0,265 |
| No | 31,9±3,7 | |
| **Sex** | | |
| Male | 32,4±4,2 | 0,846 |
| Female | 32,2±3,0 | |

**Table 3:** PCM according to regular medication and sex

Relating the values of PCM to the workplace, USF professionals have higher (32.5) than UCSP (31.7) ones, although there is no statistically significant difference (p = 0.465).

Finally, no statistically significant differences were found when the PCM values were crossed with the age group (p = 0.839).

| | PCM | |
|---|---|---|
| | **Mean** | **p value** |
| **Workplace** | | |
| USF | 32,5±3,3 | 0,465 |
| UCSP | 31,7±4,2 | |
| **Age Group** | | |
| ≤ 35 years old | 32,5±3,2 | |
| 36 to 65 years old | 32,1±3,8 | 0,839 |
| ≥ 66 years old | 33,5±3,5 | |

**Table 4:** PCM according to workplace and age group

23-QVS Scale

There is a normal distribution of the numeric data.

There were no statistically significant differences when 23-QVS values were related to regular medication (p = 0.666). There is a difference in the average: 34.0 for those who take medication and 32.8 for those who say they are not medicated. There were no statistically significant differences in the factors of 23-QVS for the regular medication. The p values obtained were: F1 – 0,482; F2 – 0,267; F3 – 0,284; F4 – 0,075; F5 – 0,088; F6 – 0,704; F7 – 0,792.

However, analyzing the mean of each of the factors of the instrument separately, we noticed that there is an important difference between the means of factor

4 (adverse living conditions), being -0.0032 for those who take medications and 0.3922 for those who don't.

There were no significant differences when the 23-QVS values were related to the sex (p = 0.938). The averages are also very similar: 33.2 for the female sex and 33.4 for the masculine sex. The p values obtained were: F1 – 0,901; F2 – 0,776; F3 – 0,331; F4 – 0,529; F5 – 0,675; F6 – 0,523; F7 – 0,102.

| | 23-QVS | | | |
|---|---|---|---|---|
| | **<43** | **≥43** | **Mean** | **p value** |
| **Regular medication** | | | | |
| Yes | 20 (32,3%) | 3 (4,8%) | 34,0±9,6 | 0,666 |
| No | 34 (54,8%) | 5 (8,0%) | 32,8±11,1 | |
| **Sex** | | | | |
| Male | 21 (33,9%) | 3 (4,8%) | 33,2±10,7 | 0,938 |
| Female | 33 (53,2%) | 5 (8,0%) | 33,4±10,5 | |

**Table 5:** 23-QVS according to regular medication and sex

There were no statistically significant differences when the 23-QVS values were related to the workplace (p = 0.052). There is, however, a significant difference on average, which shows that UCSP workers score higher on the 23-QVS (37.6), while those working in the USF have an average score of 31,7.

There were also no statistically significant differences in the 23-QVS factors for the workplace. The p values obtained were: F1 – 0,966; F2 – 0,758; F3 – 0,013; F4 – 0,012; F5 – 0,636; F6 – 0,224; F7 – 0,412.

However, analyzing each of the factors separately, we noticed that there is an important difference between the means of factors 3 and 4. Factor 3, which refers to the lack of social support, presents an average score of 0,37 in USF workers and an average score of 0,96 in those working in UCSP, which concludes that the lack of social support contributes more to the vulnerability to stress in those who work in UCSP. Factor 4, which is related to adverse living conditions, also shows a significant difference in the means, being 0,09 in the USF and 0,70 in the UCSP, which concludes that the adverse living conditions contribute less to the vulnerability to stress in professionals working in USF.

There was no statistically significant difference when comparing the values of 23-QVS and the age group, with p = 0.207 (table 6). However, there is a significant difference in the value of the means obtained in the test according to the age group: while physicians with 35 years or older obtained an average of 33.4 and those aged 36 to 65 obtained a mean close to the previous group (33.1), the age group that includes physicians aged 66 or over obtained an average of 21.0.

Since the age group of doctors over 65 had only two participants, we chose to do the factors' (F) statistical analysis by merging this age group with the next lower one.

From the detailed analysis of the 23-QVS factors, no statistically significant differences were obtained: F1 – 0,015; F2 – 0,807; F3 – 0,011; F4 – 0,938; F5 – 0,155; F6 – 0,515; F7 – 0,061.

However, the means of factors 3 and 7 show interesting data: in the age group of physicians aged 35 years or less, the mean of factor 3 (lack of social support) was lower (0.21) than that obtained for the remaining physicians (0.76). On the other hand, when we analyzed factor 7 (deprivation of affection and rejection), we noticed that the

mean is lower (0.36) for physicians above 36 years, being 0.75 for physicians aged 35 years or less.

| | 23-QVS | | | |
|---|---|---|---|---|
| | **<43** | **≥43** | **Mean** | **p value** |
| **Workplace** | | | | |
| USF | 41 (66,1%) | 5 (3,1%) | 31,7±10,4 | 0,052 |
| UCSP | 13 (21,0%) | 3 (1,9%) | 37,6±9,8 | |
| **Age Group** | | | | |
| ≤ 35 years old | 22 (35,5%) | 4 (6,5%) | 33,4±9,6 | 0,207 |
| 36 to 65 years old | 30 (48,4%) | 4 (6,5%) | 33,1±11,1 | |
| ≥ 66 years old | 2 (3,2%) | 0 (0%) | 21,0±5,7 | |

**Table 6:** 23-QVS according to workplace and age group

Comparison between the 23-QVS and PCM scale

The results obtained from the 23-QVS and PCM cross data show that there is no statistically significant difference between the scales (p = 0.206). (Table 7)

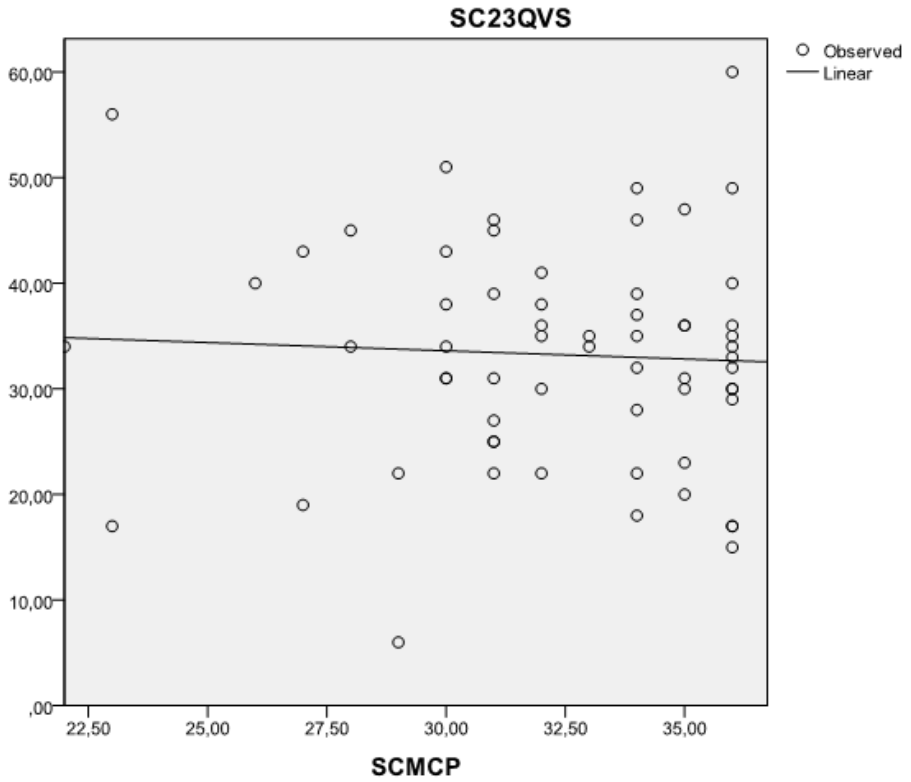
| | | PCM | | p-value |
|---|---|---|---|---|
| | | Good (>P50) | Bad (<P50) | |
| **23-QVS** | <43 | 30 (48,4%) | 24 (38,7%) | 0,206 |
| | ≥ 43 | 6 (9,7%) | 2 (3,22%) | |

**Table 7:** 23-QVS and PCM cross tabulation

Of the 54 physicians who scored <43 on 23-QVS, and thus were more resistant to psychological stress, 30 considered to perform a patient-centered medicine, unlike the remaining 24 who admitted not to do so.

Of the 8 physicians most vulnerable to psychological stress (score 23-QVS ≥ 43), 6 performed patient-centered medicine and 2 considered not to do so.

Analyzing the data using a linear regression, the following graph was obtained which, although it did not demonstrate, as would be expected from the p value, a statistically significant relationship between the scales, shows a slight follow-up of the line, decreasing the value of the 23-QVS as the value of the PCM increases.



## Discussion

The sample obtained is the one expected in the context of the institutions in which the surveys were distributed: USF and UCSP, with a majority of female doctors, between 36 and 65 years of age, working in USF and not regularly medicated.

In an attempt to obtain a larger and more accessible sample, a strategy of non-probabilistic sampling of convenience was chosen, as the health units to be included. As a result of this choice and availability, and in order that the identification of each participant was not possible, ensuring the confidentiality of the work, a number of inquiries were given to the coordinator of each unit equal to the number of physicians in office. The coordinator was responsible for the delivery and collection of the questionnaires and subsequent delivery to the investigator.

This non-probabilistic sampling strategy may indeed be a limitation, but was adopted as a way of encouraging the participation of physicians in the study.

We verified that, although the surveys were distributed in USF and UCSP in the north and center of the country, the ACeS best represented in this study is Baixo Mondego, perhaps because it was the researchers' area of residence, facilitating not only the adherence to the study such as the distribution and collection of the questionnaires.

The sample is therefore not representative of the population of the northern or central regions nor of the Portuguese population, which constitutes a limitation in the realization of generalizations.

In the course of the field work and as each participating health unit has been delivering its completed surveys, we have come to the realization of small details that

can be improved in future work, in particular with regard to the characterization of the sample.

The sample was studied according to three pre-specified age groups. Since we intend to study if doctors perform patient-centered medicine as well as their vulnerability to stress, we intended to know how years of medical practice would influence outcomes.

Also the question "do you take medications regularly?" can be improved. It would be interesting to specify the pharmacological classes in order to relate resistance to psychological stress with the type of drug.

It would also be relevant to know whether or not doctors suffer from a chronic illness, so that the question "Suffering from a chronic illness?" may be more discriminative, having more than the "yes" and "no" possible answers.

These changes will allow a more reliable self-characterization of the sample, but above all will allow a more complete interpretation of the results.

Most of the physicians surveyed believe that they are doing patient-centered medicine, which is encouraging, since it meets the hopped ideal in medical practice: a person-centered medicine, rather than a disease-centered one, that promotes patient satisfaction, treatment adherence and medical outcomes.[3]

The PCM values were analyzed according to the four variables of the sample: sex, age group, work place and regular medication. However, for none of the parameters a statistically significant difference was obtained, meaning that none of them affects especially the practice of patient centered medicine. The mean scores obtained were very similar, regardless of the chosen variable.

Failure to obtain statistically significant results can be related to the small sample size. We found no other studies in Portugal in these matters so meaning that the present one must be interpreted cautiously as ever first ones.

The overwhelming majority of physicians surveyed scored <43 on 23-QVS, showing that they were less vulnerable to stress, whereas 12,9% of the respondents were vulnerable to psychological stress.

All 23-QVS factors were studied and, with a mean of 2,4, factor 1 (perfectionism and frustration intolerance) is the one that contributes most to the increase in the value of the test, and thus the one more involved in the vulnerability to psychological stress. Factor 5 (dramatization of existence) also plays a prominent role in these results being the second top in the list of factors with the highest core (1,6).

Both factors 1 and 5 relate to the personality of each of the respondents so it would be interesting to put the question "What weight does the personality of the physician assume in his ability to resist psychological stress?" It is important to study what are the dominant personality traits among physicians and whether there is any kind of correlation between these two factors. A study conducted in the US concluded that even medical students (and potentially not subject to the challenging conditions of work) were more likely to exhibit symptoms of depression than the population control samples[9], emphasizing the premise that personality can indeed assume a role of vulnerability to stress that should not be ignored. In fact, in our sample perfectionism and frustration intolerance and dramatization of existence are the factors with higher scores.

The 23-QVS data were analyzed according to the four variables studied: gender, age group, place of work and regular medication.

Although statistically significant values were not obtained when comparing 23-QVS data with regular medication, individual analysis of each of the test factors revealed an interesting point: the mean factor 4 (adverse living conditions) is -0.0032 in physicians who take medication and 0.3922 in doctors who do not. The interpretation of this data reiterates the above mentioned: It is important to include in the characterization

of the sample by mentioning the pharmacological class. It would be innovative to know if the type of drug is related to living conditions, thus helping to explain the disparate outcome between the two classes, or whether this aspect is not related to the values obtained.

With regard to sex, no statistically significant results were obtained. Even by the detailed analysis of each of the 23-QVS factors, we did not observe significant differences in the means of each sex. We attribute this to the reduced size of the sample and so in future studies, where sample collection is representative of the population, it would be interesting to answer the questions: "Man or woman, which one is more resistant to psychological stress when it comes to PCM practice?"

By analyzing the 23-QVS factors (F) individually according to the workplace, and although no statistically significant results were obtained, interesting data were recorded. Doctors working in UCSP have higher means in the 23-QVS than those doctors working in USF. What this means, what this implies and what health consequences it might bring about in the future is what must be studied. Also the means of some factors (F) show interesting results: In factor 3 (lack of social support), the mean is 0.37 in USF and 0.96 in UCSP and in factor 4 (adverse living conditions), the mean is 0.09 in USF and 0.70 in UCSP. These values allow us to think that both factors contribute more to the vulnerability to stress in physicians who perform functions in UCSP than in those who practice them in USF, even if this population is more female and younger.

These will be important aspects to clarify in future work understanding if there are any characteristics in the work environment or satisfaction of the doctors of UCSP that can explain these differences.

A study carried out in Portugal has shown that burnout rates between 2011 and 2013 in physicians working in UCSP is higher than that for physicians working in a hospital environment or USF.[11]

Although they are two different concepts (burnout and psychological stress), the truth is that less resistance to stress can influence, along with the other factors, the development of burnout syndrome, so we cannot fail to record these data.

Even though there are no statistically significant differences when comparing the 23-QVS values with the age group, there is a difference that does not go unnoticed when we analyze the means of each group. Thus, the first two groups (i.e. physicians up to and including 65 years of age) obtained similar averages among themselves, with the group represented by physicians over 65 years of age obtaining a much lower mean score. Being only represented by 2 physicians and not having we obtained a p value <0.001, the premise here raised "Are the older doctors more resistant to psychological stress?" can serve as a foundation for future studies in this field.

Regarding the analysis of the factors (F) of the 23-QVS, we chose to merge the last two age groups (due to the reduced size of the age group 3: > 65 years) to perform the statistical analysis.

From this analysis it was concluded that F3 (lack of social support) contributes more to the vulnerability to stress in physicians aged 36 or over and that the affection and rejection deprivation (F7) plays a more relevant role in physicians aged 35 or less.

This pattern leads us to search for possible explanations: it can be suggested as an explanation for these data that younger doctors accept more the deprivation of affection bearing in mind the uncertainty of the future and the need of time invested in their formation, these two factors affecting the personal life of the young doctors and this, sequentially, will create vulnerability to stress.

On the other hand, older physicians who, most probably, have completed their training and have an established and permanent workplace, value the lack of social support more than the deprivation of affection.

Is it legitimate then to pose some questions: "Is age related to greater stability on a personal level?" "How does personal life affect the doctor's work and vulnerability to stress?"

And finally with the ultimate goal of validating or refuting the premise that gave rise to this study "doctors who considered practicing patient centered care presented greater resistance from psychological stress" the PCM values were crossed with those of the 23-QVS. From this statistical analysis we did not obtain differences with statistical significance, which we attribute to the reduced size of the sample.

However, when a linear regression was performed based on the total score of the two instruments in the survey, a slight follow-up of the line is recorded, decreasing the value of 23-QVS (which translates into an increase in the resistance to stress) as increase the value of the PCM, meaning more PCM. In future it will be interesting to study how this line behaves in case of larger samples or after studies involving two different groups with or without intervention on PCM.

## Conclusions

In the sample studied:

Most doctors believe that they practice patient-centered medicine.

The overwhelming majority of physicians have low levels of vulnerability to stress, according to Vaz Serra.

There is a slight correlation, although not statistical, between PCM and 23-QVS, showing that as PCM levels increase, when levels of vulnerability to stress decrease.

We consider this knowledge central in the sense of the constant evolution of health care that depends, among other factors, on the health of those who are at the service.

So it is vitally important to perceive the person-centered method and to study the results of its application not only in terms of patient satisfaction but also in terms of its impact on doctors themselves.

In future it will be interesting to perceive the behavior of these variables and factors in broader populations as well as to notice the impact of this publication in the clinical practice not only in central region but also in all country.

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**Attachment 1 – MCP: Medicina Centrada no Paciente**

Como julgo que os meus consulentes respondem após uma consulta comigo.

| | Não | Em parte | Sim |
|---|---|---|---|
| Pude falar sobre o que sentia e sobre os motivos que o trouxeram à consulta? | ☐ | ☐ | ☐ |
| Pude falar sobre os seus receios e as suas esperanças quanto aos seus problemas? | ☐ | ☐ | ☐ |
| Senti que o médico se interessa por ele, pela sua família e pelas suas condições de vida? | ☐ | ☐ | ☐ |
| Senti que o processo de tratamento será realizado em conjunto e colaboração entre o doente e o seu médico? | ☐ | ☐ | ☐ |
| Entendi os objetivos, métodos e possibilidades em relação ao "tratamento" escolhido? | ☐ | ☐ | ☐ |
| Percebi a importância de cumprir as indicações para um "tratamento" correto e que dê resultados? | ☐ | ☐ | ☐ |
| Percebi o que deve ser feito para evitar "piorar"? | ☐ | ☐ | ☐ |
| Aceitei fazer o que lhe foi proposto para "melhorar"? | ☐ | ☐ | ☐ |
| Senti que o médico se mostrou interessado em ajudar a resolver o seu problema? | ☐ | ☐ | ☐ |
| Compreendi que o sucesso do tratamento depende dele como doente e de outros profissionais que trabalham com o seu médico? | ☐ | ☐ | ☐ |
| A consulta com o médico durou o tempo necessário? | ☐ | ☐ | ☐ |
| Esta consulta com o meu médico aconteceu no momento certo? | ☐ | ☐ | ☐ |

Idade Até 35 anos ☐ Entre 36 a 65 anos ☐ Mais de 65 anos ☐

Toma medicamentos regularmente Sim ☐ Não ☐

Sexo ♀ ☐ ♂ ☐ USF ☐ UCSP ☐

## Attachment 2 – 23-QVS: questionário de vulnerabilidade ao *stress*

| | **Concordo em absoluto** | **Concordo bastante** | **Nem concordo nem** | **Discordo Bastante** | **Discordo em Absoluto** |
|---|---|---|---|---|---|
| Sou uma pessoa determinada na resolução dos meus problemas | ☐ | ☐ | ☐ | ☐ | ☐ |
| Tenho dificuldade em me relacionar com pessoas desconhecidas | ☐ | ☐ | ☐ | ☐ | ☐ |
| Quando tenho problemas que me incomodam posso contar com um ou mais amigos que me servem de confidentes | ☐ | ☐ | ☐ | ☐ | ☐ |
| Costumo dispor de dinheiro suficiente para satisfazer as minhas necessidades pessoais | ☐ | ☐ | ☐ | ☐ | ☐ |
| Preocupo-me facilmente com os contratempos do dia-a-dia | ☐ | ☐ | ☐ | ☐ | ☐ |
| Quando tenho um problema para resolver usualmente consigo alguém que me possa ajudar | ☐ | ☐ | ☐ | ☐ | ☐ |
| Dou e recebo afecto com regularidade | ☐ | ☐ | ☐ | ☐ | ☐ |
| É raro deixar-me abater pelos acontecimentos desagradáveis que me ocorrem | ☐ | ☐ | ☐ | ☐ | ☐ |
| Perante as dificuldades do dia-a-dia sou mais para me queixar do que para me esforçar para as resolver | ☐ | ☐ | ☐ | ☐ | ☐ |
| Sou um indivíduo que se enerva com facilidade | ☐ | ☐ | ☐ | ☐ | ☐ |
| Na maior parte dos casos as soluções para os problemas importantes da minha vida não dependem de mim | ☐ | ☐ | ☐ | ☐ | ☐ |
| Quando me criticam tenho tendência a sentir-me culpabilizado | ☐ | ☐ | ☐ | ☐ | ☐ |
| As pessoas só me dão atenção quando precisam que faça alguma coisa em seu proveito | ☐ | ☐ | ☐ | ☐ | ☐ |
| Dedico mais tempo às solicitações das outras pessoas do que às minhas próprias necessidades | ☐ | ☐ | ☐ | ☐ | ☐ |
| Prefiro calar-me do que contrariar alguém no que está a dizer, mesmo que não tenha razão | ☐ | ☐ | ☐ | ☐ | ☐ |
| Fico nervoso e aborrecido quando não me saio tão bem quanto esperava a realizar as minhas tarefas | ☐ | ☐ | ☐ | ☐ | ☐ |
| Há em mim aspectos desagradáveis que levam ao afastamento das outras pessoas | ☐ | ☐ | ☐ | ☐ | ☐ |
| Nas alturas oportunas custa-me exprimir abertamente aquilo que sinto | ☐ | ☐ | ☐ | ☐ | ☐ |
| Fico nervoso e aborrecido se não obtenho de forma imediata aquilo que quero | ☐ | ☐ | ☐ | ☐ | ☐ |
| Sou um tipo de pessoa que, devido ao sentido de humor, é capaz de se rir dos acontecimentos desagradáveis que lhe ocorrem | ☐ | ☐ | ☐ | ☐ | ☐ |
| O dinheiro de que posso dispor mal me dá para as despesas essenciais | ☐ | ☐ | ☐ | ☐ | ☐ |
| Perante os problemas da minha vida sou mais para fugir do que para lutar | ☐ | ☐ | ☐ | ☐ | ☐ |
| Sinto-me mal quando não sou perfeito naquilo que faço | ☐ | ☐ | ☐ | ☐ | ☐ |

## Attachment 3 – Aprovação da comissão de ética

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:

16-06-01

Dr. José [illegible] Marinho Falcão
Presidente do Conselho Directivo
da A.R.S. Centro, I.P.

**Estudo 17/2016** do 10/02/2016

ASSUNTO: **"Doctors who consider practicing patient centered care present greater resistance from psychological stress**

Tendo sido enviados os documentos em falta, o parecer é favorável

Coimbra, 18 de maio de 2016

O Relator

(Padre José António Pais)

O Presidente da CFS

(Prof. Dr. Fontes Ribeiro)