



icH&Hpsy 2016 : 2nd International Conference on Health and Health Psychology

Personality and Suffering in the Hospitalized Chronically ill

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Abstract

<http://dx.doi.org/10.15405/epsbs.2016.07.02.41>

The development of studies correlating personality traits with suffering in illness can be very useful to understand the chronically ill response in a transitional health/ disease process. Do the “*subjective experiences of suffering in disease*” correlate with personality traits of the hospitalized chronically ill? Do sociodemographic, familiar and clinical variables correlate with personality traits of the hospitalized chronically ill? The purpose of the study is to understand which “*personality*” traits are present in the hospitalized chronically ill, and the correlation with the “*subjective experiences of suffering*”, sociodemographic, familiar and clinical variables. This is a non-experimental, cross-sectional descriptive-correlational and quantitative study, used in a non-probabilistic convenience sample of 307 hospitalized chronically ill. Data were collected through a questionnaire between January and June 2013. It was requested the permission of the *Hospital de São Teotónio*'s ethics committee, as well as the informed consent of each participant. Data processing was performed statistically. The participants in our study had higher values of “*neuroticism*” than those of the authors of the NEO-FFI-20 inventory. The variable “*conscientiousness*” explains 12.5% of the variance of “*suffering*”. “*Openness to experience*”, is associated inversely with the experience of “*suffering*”, which is when it increases hope and “*openness to experience*”, decreases the “*suffering*” of the chronically ill. The evidence invites us to reflect on the influence of intrinsic factors in suffering. Patients deal with life/ disease in many different ways, which affects the response to the transitional health/ disease process.

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Keywords: Patients; Chronic disease; Personality; Suffering.

1. Introduction

Nurses daily witness human suffering, and the care providers in the hospital, who spend more time with patients and families. With the increased longevity, the presence of chronically ill are increasingly common in Portuguese hospitals. These patients do not expect healing and have to learn to deal with



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this condition, which makes the biomedical model misfit to their real needs. Thus, comprehend and alleviate the suffering should be understood as key elements of nursing care, should be an ethical and moral concern to demand its relief.

Suffering comes from the perceived treat, which is understood as anything that messes with our continuity, integrity, ability to cope and respond (Barbosa, 2010). Results from a life changing process (intentional or not) that leads the individual to a transition process (healthy or pathological) that exposes to a vulnerability and risks that may significantly affect their health (Meleis, Sawyer, Im, Hilfinger Messias, & Schumacher, 2000).

In our view, human suffering may be associated with an intrinsic and at the same time dynamic factor of the person: personality. According to McCrae & Costa (1996) personality is a system made of personality traits and dynamic processes by which affect the individual's psychological processes. The study of personality has been closely associated with the degree of vulnerability to stress and risk health behaviours (Bennett, 2002; Alminhana & Moreira-Almeida, 2009 and Sutin, Zonderman, Ferrucci, & Terraciano, 2013).

Thus we believe that the development of studies correlating personality traits with suffering in illness, are in our understanding of great relevance and usefulness if we consider the personality as an intrinsic factor of the person, which is not "immutable" (Chapman, Hampson, & Clarkin, 2014) and may condition his response to a transition process.

Theoretical personality models today commonly used in health psychology and liaison psychiatry are: the three-factor Eysenck model ("*neuroticism*", "*extraversion*", "*psychoticism*") and the five factors of McCrae & Costa (Telles-Correia, Barbosa, & Mega, 2010). However, these issues have not achieved consensus among authors. Personality psychologists do not agree on the number of dimensions that characterize the personality, with the model of the big five factors which brings together the largest consensus (Hansenne, 2004).

The five factors model, developed by McCrae & Costa (1996), is based on the model of the three factors. The authors consider that low "conscientiousness" and "agreeableness" correspond to the size of "psychoticism" in the three-dimensional model, so they chose to eliminate this last dimension. They assumed to identify "neuroticism" and "extroversion" as basic personality traits and add three new concepts: "*conscientiousness*" – more organized and determined individuals; "*agreeableness*" – more honest people, sincere and willing to help others; "openness to experience" – more curious individuals on the outer and inner world, opened to new ideas and experiences.

The five factor model of McCrae & Costa was applied to samples with highly diverse cultures, with with five different language families: American, German, Portuguese, Hebrew, Chinese, Korean, Japanese. These data strongly suggest that personality traits are universal structure (McCrae & Costa, 1997).

Among the most widespread instruments are the Revised NEO Personality Inventory (NEO PI-R) with 240 items and its reduced version NEO Five-Factor Inventory (NEO-FFI) that comprises 60 items of McCrae & Costa (1989). However, to integrate instruments with various variables they reveal to be very extensive, reducing the adherence of the participants, which represents a limitation. For this reason, Bertoquini & Pais-Ribeiro (2006) felt the need to build a very small scale of 20 items (NEO-FFI-20),

based on the NEO-PI-R, which has proved convergent validity, discriminant and concurrent. It proved to be especially useful when time is limited and global information on the personality is enough (Bertoquini & Pais-Ribeiro, 2006).

2. Problem statement

The development of studies correlating personality traits with suffering in illness are scarce and show to be very helpful in understanding and organizing responses to the chronically ill in a transitional health/disease process.

3. Research questions

Do sociodemographic, familiar and clinical variables correlate with personality traits of the hospitalized chronically ill?

Do the “*subjective experiences of suffering in disease*” correlate with personality traits of the hospitalized chronically ill?

4. Purpose of the study

To identify the “personality traits” of the hospitalized chronically ill and their correlation with sociodemographic, familiar, clinical and suffering variables.

5. Research methods

5.1. Study design

This is a non-experimental, cross-sectional descriptive-correlational and quantitative study. The sample is a non-probabilistic convenience.

5.2. Participants

The study took place in the “*Hospital de São Teotónio*”, a Portuguese central hospital. Participated 307 hospitalized patients with the following inclusion criteria: (1) to have more than 18 years old, (2) no vital function compromised, (3) no psychiatric pathology diagnosed, (4) to have a chronic disease, (5) to be oriented in time and space, (6) to be able to answer the questionnaire.

5.3. Data collection

Data were collected through a questionnaire that integrates family APGAR scale of Smilkinstein, the Inventory of Subjective Experiences of Suffering in Disease (IESSD, “*Inventário das Experiências Subjetivas do Sofrimento na Doença*”) from McIntyre & Gameiro (1999) and the NEO-FFI-20 Personality Inventory (Bertoquini & Pais Ribeiro, 2006).

“Familiar functionality” perception was assessed by family APGAR scale; “Suffering” was assessed by the IESSD Inventory; “Personality traits” were assessed by the NEO-FFI-20 Personality Inventory.

The IESSD inventory was applied to 125 adult patients with two or more days of hospitalization. The last version of the inventory has 44 items answered on a 5-point Likert format ranging from totally false to correspond fully. It assesses 5 dimensions: psychological suffering, physical, existential and socio relational, and positive experiences of suffering. The global scale score is the sum of all items: the highest score corresponds to a higher subjective experience of suffering in disease. The internal consistencies of the global scale are higher than 0.9, which is very good.

This is a much reduced version of the Revised NEO Personality Inventory (NEO-PI-R) of Costa & McCrae (1992). NEO-FFI-20 was constructed and validated for Portuguese population by Bertoquini & Pais-Ribeiro (2006), who consider that when general information about personality is enough, this can be a useful instrument. It consists of 20 items answered on a 5-point Likert format ranging from strongly disagree to strongly agree, which assesses the 5 “personality traits”: “neuroticism”, “extraversion”, “openness”, “agreeableness” and “conscientiousness”. The internal consistencies are higher than 0.70 which is satisfactory.

5.4. Ethic proceedings

It was requested the permission of the hospital’s ethic committee who gave its approval. Participants were informed of the purpose and objectives of the study, such as the right to withdraw from it at any time, free of any coercion, seeking protection against the discomfort and injury. The free informed consent was obtained, being assured respect for autonomy, privacy, anonymity and confidentiality.

5.5. Statistical analysis

Data processing was performed statistically with SPSS Statistics 19.0 (Statistical Package for the Social Sciences). The quantitative variables were expressed by mean \pm standard deviation and coefficient of variation. The qualitative variables were expressed through frequencies after content analysis. To study the variables’ correlation it was used the Mann Whitney U test, Kruskal-Wallis H test, the Student t distribution, one-way ANOVA and simple linear regression.

6. Findings

Results indicate that our sample is mainly male (51.1%), constituted by hospitalized chronically ill between 26 and 91 years old, with a mean (M) of 64.84 years, a standard deviation (SD) of 14.989 years and a coefficient of variation (CV) of 23.1%, indicating the existence of moderate dispersion around the mean.

In order to evaluate the chronically ill’s “personality traits”, it was used the NEO-FFI-20 personality inventory. The inventory’s results are evaluated according to the mean of each one of its five dimensions: “neuroticism”, “extroversion”, and “openness to experience”, “agreeableness” and

“conscientiousness”. The highest score on a determined dimension corresponds to a higher presence of that personality trait.

In Table1, we can observe NEO-FFI-20 personality inventory results. Regarding “neuroticism”, the obtained mean value is 8.81, with a standard deviation of 2.276, with values oscillating between a minimum of 4 and a maximum of 13, presenting a moderate dispersion around the mean with a 25.8% coefficient of variation. Based on asymmetry measures or bias (Skewness/ Std. Error) and flattening or kurtosis (Kurtosis/ Std. Error), we conclude that it is a symmetrical and leptokurtic distribution. With respect to “extroversion” the mean value is 8.52 with a standard deviation of 3.157. The values range is from a minimum of 1 and a maximum of 16, with a high dispersion around the mean ($CV=37.1\%$), being a symmetrical mesokurtic distribution. Concerning to “openness to experience”, the mean value is 6.65 with a standard deviation of 3.341, with values that oscillate between 0 and 13, indicating a high dispersion around the mean ($CV=50.2\%$). As for the dimension “agreeableness”, values were between 0 and 13 with a mean value of 6.91 ($SD=3.148$), with a high dispersion around the mean ($CV=45.6\%$), in the case, a leptokurtic symmetrical distribution. Finally, the dimension “conscientiousness” has a mean of 8.86 ($SD=3.095$) with values ranging from 3 to 16, with a high dispersion around the mean ($CV=34.9\%$). In the case, it is an asymmetric and mesokurtic distribution.

Table1. NEO-FFI-20 personality inventory results

Personality traits	Min	Max	<i>M</i>	<i>SD</i>	Sk/ _{error}	K/ _{error}	<i>CV</i>
Neuroticism	4	13	8.81	2.276	0.614	-3.485	25.8
Extroversion	1	16	8.52	3.157	0.814	-1.775	37.1
Openness to experience	0	13	6.65	3.341	0.042	-3.353	50.2
Agreeableness	0	13	6.91	3.148	0.035	-3.182	45.6
Conscientiousness	3	16	8.86	3.095	2.914	-0.964	34.9

The comparative study between our investigation and the scale authors’ results (Bertoquini & Pais-Ribeiro, 2006), reveals that our sample has more “neuroticism” traits than the one studied by the authors ($M=8.81$ vs. $M=8.22$). In the remaining dimensions the sample used by the authors is more extroverted, kind, conscientious and greater openness to experience.

Next, we will present the correlation study between the “personality traits” and “subjective experiences of suffering in disease”, sociodemographic variables, social-familial and clinical. For this we used the Mann Whitney U test (*U*), Kruskal-Wallis H test (*H*), the Student t distribution (*t*), one-way ANOVA (*F*) and simple linear regression (*r*).

6.1. Gender

The study of “gender” influence on “personality traits” reveals significant statistical differences between women and “neuroticism” ($U=9415$; $p=0.009$), “agreeableness” ($U=8989.0$; $Z=-3.179$; $p=0.001$) and “conscientiousness” ($U=9430.0$; $Z=-2.600$; $p=0.009$). This means that women, in our sample, are more nervous, concerned, careful and kind than men. So, we can accept that “gender” influences the “personality traits” “neuroticism”, “agreeableness” and “conscientiousness”.

6.2. Age

To study the effect of “age” in “*personality traits*”, we used the simple linear regression analysis which results are presented in Table 2. There we can observe that “age” is associated positively with “*neuroticism*” ($r=0.155$; $p=0.007$) and inversely with “*extroversion*” ($r=-0.049$; $p=0.392$), “*openness to experience*” ($r=-0.136$; $p=0.018$), “*agreeableness*” ($r=-0.052$; $p=0.369$) and “*conscientiousness*” ($r=-0.033$; $p=0.567$). However, statistical evidence shows that there is only statistical significance in “*neuroticism*” and “*openness to experience*”, leading us to conclude that people with more “age” are more neurotic and less open to experience. The statistical evidence leads us to conclude that older people are more neurotic and less opened to experience. The coefficient of determination (r^2) indicates that “age” predicts 2.4% of “*neuroticism*” and 1.8% of “*openness to experience*”.

Table 2. Linear regression between “age” and NEO-FFI-20

Personality traits	r	r ² (%)	t	p
Neuroticism	0.155	2.4	2.718	0.007**
Extroversion	-0.049	0.2	-0.857	0.392
Openness to experience	-0.136	1.8	-2.377	0.018*
Agreeableness	-0.052	0.3	-0.899	0.369
Conscientiousness	-0.033	0.1	-0.573	0.567

Legend: * $p<0.05$; ** $p<0.01$

6.3. Marital Status

As for the influence of the “*marital status*” in “*personality traits*”, we found that the patients of our sample who live alone have a more extroverted personality ($M=9.25$; $SD=3.044$), revealing the t score significant differences ($t=2.862$; $p=0.005$). The same people are also more conscientious than those who live together ($U=8574.0$; $Z=-2.016$; $p=0.044$). This way, we can conclude that “*marital status*” is associated to “*personality traits*” “*extroversion*” and “*conscientiousness*”.

6.4. Profession

As for the influence of the “*profession*” in “*personality traits*”, we can see positive significant differences between “*administrative staff, personal services and sales*” and “*neuroticism*” ($U=24.761$; $p=0.000$), “*openness to experience*” ($U=37.809$; $p=0.000$) and “*agreeableness*” ($U=20.436$; $p=0.000$). In turn, those who are “*unemployed*” are more conscientious ($U=17.005$; $p=0.002$). Thus, we can say that the “*profession*” is correlated with the “*personality traits*” “*neuroticism*”, “*openness to experience*”, “*agreeableness*” and “*conscientiousness*”.

6.5. Monthly income

The participants with a “*monthly income*” of less than €300, are more conscientious ($H=18.726$; $p=0.000$), as opposed to those who earn more than €1000 have greater “*openness to experience*”

($H=11.260$; $p=0.004$). These results allow us to conclude that the “monthly income” is related to “personality traits” “conscientiousness” and “openness to experience”.

6.6. Education

The study of the relationship between “education” and “personality traits” allows us to see that respondents “illiterate” are the kindest of the sample ($H=25.287$; $p=0.000$). Those with “primary education” have the highest mean weight in the dimensions “neuroticism” (162.61) and “conscientiousness” (165.72), unlike those who have “university degrees” (89.63 and 118.88 respectively), with statistical significant differences for both “neuroticism” ($H=13.306$; $p=0.010$) and “conscientiousness” ($H=11.612$; $p=0.020$).

In its turn, the respondents who have “university degrees” are the less extroverted, revealing the one-way ANOVA F-test, significant differences ($F=2.977$; $p=0.020$). On the other hand, the same respondents with “university degrees” are the most opened to new experiences ($H=19.348$; $p=0.001$)

Therefore it is concluded that “education” influences the “personality traits”.

6.7. Perception of family functionality

The analysis of the influence of “family functionality” perception in “personality traits” (cf. Table3), reveals that when the family is more functional, decreases “openness to experience” ($r=-0.147$; $p=0.018$) and “conscientiousness” ($r=-0.187$; $p=0.003$). In other words, the greater perception of “family functionality”, the lower opening to new life experiences and the less stringent and cautious people are.

The coefficient of determination (r^2) indicates that “family functionality” predicts 2.2% of “openness to experience” and 3.5% of “conscientiousness”.

Table 3. Linear regression between “family functionality” and NEO-FFI-20

Personality Traits	r	r ² (%)	t	p
Neuroticism	0.100	1.0	1.605	0.110
Extroversion	-0.112	1.2	-1.798	0.073
Openness to experience	-0.147	2.2	2.376	0.018*
Agreeableness	0.066	.4	1.058	0.291
Conscientiousness	-0.187	3.5	-3.033	0.003**

Legend: * $p<0.05$; ** $p<0.01$

6.8. Pathology

To study the effect of “pathology” in “personality traits”, it was performed Kruskal-Wallis H test (H) and one-way ANOVA (F). By the detailed data analysis (cf. Table4) we can see that the respondents with a “cardiovascular” disease have a predominant neurotic personality ($H=49.377$; $p=0.000$).

In its turn, people with “*gastrointestinal/ liver*” diseases are the most extroverted ($F=4.658$; $p=0.000$). Those with “*ostearticular*” disease present the highest levels of “*openness to experience*” ($H=49.393$; $p=0.000$) and “*agreeableness*” ($H=33.503$; $p=0.000$). Finally, the patients with “*neurological*” disorders are the most conscientious ($H=43.998$; $p=0.000$).

Therefore we conclude that the “*pathology*” causes significant influence in “*personality traits*”.

Table 4. Relationship between “*disease that causes more suffering*” and NEO-FFI-20

Pathology	Neuroticism Mean weight	Extroversion <i>M</i>	Openness to experience Mean weight	Agreeableness Mean weight	Conscientiousness Mean weight
Cardiovascular (n=32)	208.36	9.45	147.71	129.43	200.64
Renal (n=39)	133.26	8.87	93.12	107.63	164.04
Pulmonary (n=47)	158.53	7.76	117.63	166.93	181.22
Neurological (n=26)	191.90	7.84	188.27	125.90	201.04
Oncological (n=104)	162.04	9.01	163.77	152.63	123.00
Osteoarticular (n=9)	83.50	6.11	239.44	258.00	153.67
Metabolic (n=33)	83.80	7.0	149.36	168.98	130.71
Digestive/ Liver (n=16)	119.50	10.75	215.38	190.00	94.00
	H=49.377 p=.000***	F=4.658; p=.000***	H=49.393 p=.000***	H=33.503 p=.000***	H=43.998 p=.000***

Legend: *** $p<0.001$

6.9. Suffering

The study of the relationship between “*suffering*” and “*personality traits*” demonstrate significant positive associations with “*neuroticism*” ($r=0.116$; $p=0.044$), “*extroversion*” ($r=0.125$; $p=0.030$) and “*conscientiousness*” ($r=0.329$; $p=0.000$). That is, patients who are more neurotic, extroverted and careful, present higher levels of “*suffering*”. On the other hand, we observe two significant negative associations that reveal that the most amiable ($r=-0.139$; $p=0.015$) and opened people ($r=-0.242$; $p=0.000$) are those who suffer less.

Coefficient of determination (r^2) indicates that *C* predicts 10.8% of “*suffering*”, “*openness to experience*” predicts 5.8% of “*suffering*”, “*agreeableness*” predicts 1.9% of “*suffering*”, “*extroversion*” explains 1.6% and “*neuroticism*” is responsible for 1.3% of “*suffering*” variability (cf. Table 6). In conclusion, “*personality traits*” predict “*suffering*” in disease.

Table 6. Linear regression between IESSD and NEO-FFI-20

Personality Traits	r	r ² (%)	t	p
Neuroticism	0.116	1.3	2.024	0.044*
Extroversion	0.125	1.6	2.181	0.030*
Openness to experience	-0.242	5.8	-4.318	0.000***
Agreeableness	-0.139	1.9	-2.438	0.015*
Conscientiousness	0.329	10.8	6.023	0.000***

Legend: * p<0.05; *** p<0.001

7. Conclusions

The comparative analysis between this research and the results obtained by the authors of the scale (Bertoquini & Pais-Ribeiro, 2006) reveals that our sample has averaged more traits of “*neuroticism*” ($M=8.81$ vs. $M=8.22$). In the remaining dimensions we find that the sample used by Bertoquini & Pais-Ribeiro (2006) is more outgoing, kind, conscientious and with greater “*openness to experience*”. These results may be explained by the average age of our sample and the fact that they have chronic diseases diagnosed.

The results corroborate the meta-analysis of Jokela, Hacuinen, Singh-Manoux, & Kivimäki (2014), which reveals personality changes after the onset of a chronic disease, with consistent reductions in “*extraversion*”, “*emotional stability*”, “*conscientiousness*”, “*openness to experience*”, but not in “*agreeableness*”. These personality changes accentuated with age, with the presence of more than one chronic disease, corresponding the biggest changes to the presence of co-morbidities (Jokela, Hacuinen, Singh-Manoux, & Kivimäki, 2014).

We found in our study that the variables: “*gender*” is positively correlated with “*neuroticism*”, “*agreeableness*” and “*conscientiousness*”; “*age*” is positively associated to “*neuroticism*” and negatively to “*openness to experience*”; “*marital status*” is positively correlated with the “*extroversion*” and “*conscientiousness*”; “*profession*” is positively associated to “*neuroticism*”, “*openness to experience*”, “*agreeableness*” and “*conscientiousness*”; “*monthly income*” correlates positively to “*openness to experience*” and “*conscientiousness*”; “*education*” is positively associated to “*neuroticism*”, “*openness to experience*”, “*agreeableness*” and “*conscientiousness*”; it was also a negative correlation with “*extraversion*”; “*family functioning*” perception correlates negatively with “*openness to experience*” and “*conscientiousness*”; “*pathology*” was positively associated with all the “*personality traits*”; “*suffering*” was positively correlated with “*neuroticism*”, “*extraversion*” and “*conscientiousness*”; also associates it negatively to “*openness to experience*” and “*agreeableness*”.

Hospitalized chronic patients with the highest levels of “*neuroticism*”, that is, the most emotionally unstable, are women, older, belonging to the professional group “*administrative staff, personal services and sales*” with “*primary education*” and “*cardiovascular*” disease. The “*neuroticism*” explains 1.3% of the variance of “*suffering*”.

The more extroverted are unaccompanied by a spouse, with “*gastrointestinal/liver*” pathology and explains 1.6% of the variance of the “*suffering*”. In turn, people with “*university degrees*” are the most thoughtful and calm.

People with greater “*openness to experience*” are the youngest, belonging to the professional group “*administrative staff, personal services and sales*”, with a monthly income higher than €1000, with “*university degrees*”, inserted in less functional families, “*osteoarticular*” pathology, whose “*suffering*” variance is less 5.8%.

The “*agreeableness*” is more prevalent in women, in the professional group “*administrative staff, personal services and sales*”, in the illiterate people, osteoarticular pathology, whose “*suffering*” variance is 1.9% lower.

Finally, the most conscientious hospitalized chronically ill are women who live without the company of a spouse, unemployed, with a monthly income less than €300, with “*primary education*”, belonging to less functional families, with neurological disease. As for the experience of “*suffering*”, the same determined and organized people are those who suffer the most (10.8% of the variance of “*suffering*”).

In conclusion we can say that in fact the personality is an active process, intrinsic to the human being responsible for how each one approaches life and how he relates to the other; some personality traits are more related to exposure to risky health behaviours: high “*neuroticism*” and low “*conscientiousness*” (Sutin, Zonderman, Ferrucci, & Terraciano, 2013). In turn, the chronic disease is seen as potentiating personality changes (Jokela, Haculinen, Singh-Manoux, & Kivimäki, 2014) so, early intervention in relevant aspects of personality is seen as necessary to improve the health, greater suitability of people treatments such as more accurate resource allocation improving the cost-effectiveness (Chapman, Hampson, & Clarkin, 2014).

For nursing practice, the comprehension of this problem becomes essential since it can allow enhance health gains, ensuring the chronically ill a healthy adaptation. However, due to the lack of studies in the field of personality and the chronically ill suffering relief, is to respond if the suffering in illness can be alleviated with intervention actions in relevant aspects of personality.

We believe that the study of the chronically ill’s personality should be deeper, for a more targeted treatment, more personalized, holistic and if necessary a multidisciplinary intervention care.

Acknowledgements

We would like to express our gratitude to *Centro Hospitalar Tondela-Viseu* and all participants for sharing their most intimate feelings and experiences.

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