

**CONCORDÂNCIA ENTRE OS DOMÍNIOS SOCIAIS DO PSN E SF-36 NA
AVALIAÇÃO DA QUALIDADE DE VIDA: UMA REVISÃO SISTEMÁTICA DA
LITERATURA**

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RESUMO: A fim de aprimorar o conhecimento acerca de instrumentos de qualidade de vida para uso mais adequado dos mesmos, objetivou-se verificar na literatura científica se há evidência de correspondência entre os domínios sociais do PSN e SF-36 quando da avaliação de QVRS de população geral ou população com doenças crônicas. Para isso, foi realizada uma busca nas bases de dados Pubmed, Web of Science, LILACS, SciELO e CINAHL. A busca foi

executada por duas pesquisadoras independentes que, após a coleta, realizaram uma reunião para identificação de possíveis diferenças entre os artigos encontrados e selecionados, para realização de um consenso. Foram selecionados apenas aqueles artigos que comparassem os domínios sociais do SF-36 e PSN. Dezoito artigos foram incluídos, a estratégia utilizada para verificação da correspondência entre os domínios foi, predominantemente, o Coeficiente de Correlação de Pearson ou de Spearman. Os resultados demonstraram baixa ou média correlação entre os domínios. O que foi agravado pelo fato de a correlação entre os domínios sociais serem, frequentemente, inferiores a correlação entre outros domínios presumidamente comparáveis, além de domínios sociais apresentarem correlações mais fortes com domínios presumidamente não correspondentes.

Palavras chaves: Acurácia. Qualidade de Vida. Questionários. SF-36. NHP.

ABSTRACT: In order to improve knowledge about quality of life instruments for better use of them, this study aimed to review literature for evidence of NHP and SF-36 social domains correspondence when assessing HRQoL of general population or people with chronic diseases. For this, a search was made in Pubmed, Web of Science, LILACS, SciELO and CINAHL. The search was performed by two independent researchers that after collection held a consensus meeting. Only articles comparing SF-36 and NHP social domains were selected. Eighteen articles were included. The strategy used to test correspondence between domains was predominantly Pearson or Spearman correlation coefficient. Results showed low or average correlation between social domains. In addition, correlation between social domains is often lower than correlation between other presumably comparable fields. Furthermore, social domains presented strong correlations with presumably no corresponding domains.

Keywords: Accuracy . Quality of Life . Questionnaires . SF-36. NHP .

INTRODUCTION

Health Related Quality of Life (HRQoL) is an important indicator in assessing and monitoring individuals suffering from chronic illnesses. It has been widely used to assist the tracking and identification of the population's health needs and the effects of actions taken to prevention, treatment and health promotion (Seidl et al 2004; Minayo et al 2000; Campos et al 2008). It is consensus that has been repeated for decades (Hunt et al 1980; Brazier et al 1992;

Saxena et al 1997). However, such a valuable tool may not being fully understood by the healthcare team. This difficulty is perfectly justifiable, since biomedical postulates are still hegemonic in healthcare professional education, despite the collective effort to integrate biopsychosocial perspective in order to scientifically demarcate the intersection of biomedical and psychosocial aspects (Colome et al 2012; Silva et al 2010; Ciuffo et al 2008).

The difference between HRQoL index and clinical markers is precisely the possibility to investigate if physiological or pathological changes experienced by the individual are changing his quality of life. That is, how the biological dimension of the individual is interacting with their psychological and social dimensions (Saxena et al 1997). Nottingham Health Profile (NHP) and Medical Outcomes Study 36 - Item Short-Form Health Survey (SF-36) are two widely accepted instruments used by the scientific community to evaluate HRQoL. However, it is possible to notice that the social dimension of NHP and SF-36 has received less attention than emotional and biological dimensions. This observation is due to the complexity of life in society that is not contemplated in the few questions asked to assess social dimension comparing to the number of questions designed to evaluate psychological and biological dimensions (Hunt et al 1980; Brazier et al 1992; Ciconelli et al 1999; Teixeira-Salmela et al 2004).

The existence of consensus in the scientific community is, of course, indicative of the validity of scientific discovery (Oliva 1999). However, considering quality of life as defined by WHO: "individual's perception of their position in life in the context of culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (Saxena et al 1997), it becomes significantly social. This indicates that the scientific consensus on HRQoL, requires dialogue with the functioning of the social dimension in addition to physical and mental health of the individual, submitting to critical analysis (Oliva 1999).

Therefore, it is possible to say that the minor attention given to the social dimension of NHP and SF-36, demonstrates the healthcare professionals need of better understanding the social question involving the individual. This for the purpose of evaluation, treatment, prevention and health promotion actions meet more fully the biopsychosocial model. In order to improve this knowledge, the authors of the current article have developed a series of studies designed to deepen understanding about HRQoL assessment tools regarding the social dimension.

The provocative initial concern of this research came from previous findings undertaken by the same research group showing low correlation between the social domains of NHP and SF-36 in patients with rheumatoid arthritis (Ribas et al 2014). That study pointed the need of more research to understand social domains. Consequently, an investigation was developed about NHP and SF-36. These questionnaires were chosen for being widely used by the scientific community and repeatedly compared and treated as interchangeable from one another.

The current paper presents the first stage of a running research. It is a preliminary step to a more complex understanding of the issue addressed. Considering the scientific consensus on the NHP and SF-36 correspondence with the consequent indication of the use of an instrument to replace the other, and considering the findings previously found by Ribas et al (2014), it is questioned whether the given match also applies to social domains of the two instruments. This question was presented by Brazier et al (1992) in a SF-36 validation paper. Furthermore, it was reappeared in later studies of translation, cultural adaptation and validation to other populations (Zengin et al 2014; Jagsch et al 2006; Boyer et al 2006). In order that the substitute use of instruments does not configure an uncritical consensus reiteration, the objective of this study was to investigate whether NHP and SF-36 social domains correspond. It was made by systematizing state of the art.

METHOD

A search was performed on PubMed (Medline) and SciELO virtual libraries, and in LILACS, CINAHL and Web of Science databases; in November 2014 using as keywords SF-36, Nottingham and their synonyms. Keywords were sought in descriptor directory (DECS) of Biblioteca Virtual de Saúde (BVS) and MESH Pubmed, however no record was found. Thus, PubMed's advanced search tool was used to enter keywords and unite them with Boolean operators. Keywords were united by Boolean operator AND, while synonymies were united by OR. The search strategy resulted was copied and used in all other databases or virtual libraries.

This search was performed by two independent researchers that, after collection, held a consensus meeting. Papers identified on this research were initially selected by title, step which included all items indicating some comparison between the two investigated instruments. Subsequently, by reading summary and full text, only papers comparing social domains of SF-36 and NHP were selected. Population studied, year, place or any clinical outcomes were not predetermined.

Next step, all items included had their methodological strategies studied in detail. This was made in order to identify which outcome variables would answer the question of this study. Therefore, only articles that provided data to assess correlation between social domains of SF-36 and NHP, were included.

Correlation coefficient (Pearson or Spearman) was established as outcome variable to evaluate convergent validity of scores from NHP social isolation domain with SF-36 social functioning domain. In addition, Cronbach's alpha was the outcome variable for internal consistency of social subscales of both instruments.

Whereas SF-36 highly scores individuals with better HRQoL, NHP punctuates these same individuals with their lowest score. Then, it is expected that the correlation between the two instruments has a negative value. However, some authors prefer to invert this value and make

them positive. To ease data interpretation, every time correlation coefficient was reversed by studies' authors to be presented as direct (positive number), reversion was undone and it was tabbed as reverse (negative number) in this study, thus respecting the real value.

This systematic review was not preceded by any registration in a database since it had the sole purpose of evaluating correlation of theoretical concepts for use in assessment of HRQoL, without interest in subjects and clinical outcomes in this collection data.

RESULTS

The search carried out allowed to be found 400 papers in PubMed, 9 in SciELO, 5 in LILACS, 77 in CINAHL and 280 in Web of Science, which totals 771 papers found. Of these, 69 were selected after reading title, of which 25 were eliminated for being repeated. By reading summary, 11 items were removed: five for not comparing subscale of NHP and SF-36; one for not evaluating convergent construct validity of instruments; two for not including NHP; one for being a review and not comparing subscales; one by only describing use of instruments, but not evaluating their psychometric properties; and one for being an abstract of a congress, not a paper. Thus 33 papers were evaluated by reading full text.

After reading such papers 16 were eliminated: one for being a literature review about tools; one for not evaluating SF-36; one for being a letter in response to an incoming methodological critique and not involving convergent validity tests; two because there were not in full text format, there were summaries of oral presentation in 1995 and poster session in 1996; three for not assessing tools' subscales; six for not assessing domains convergent construct validity; and finally, two studies could not be included because, although authors state in their texts that assessment of convergent validity between domains has been made, they do not present these results. Emails were sent to authors of the two studies cited. However the author of one study answered claiming no longer having access to such data because he has changed jobs, no

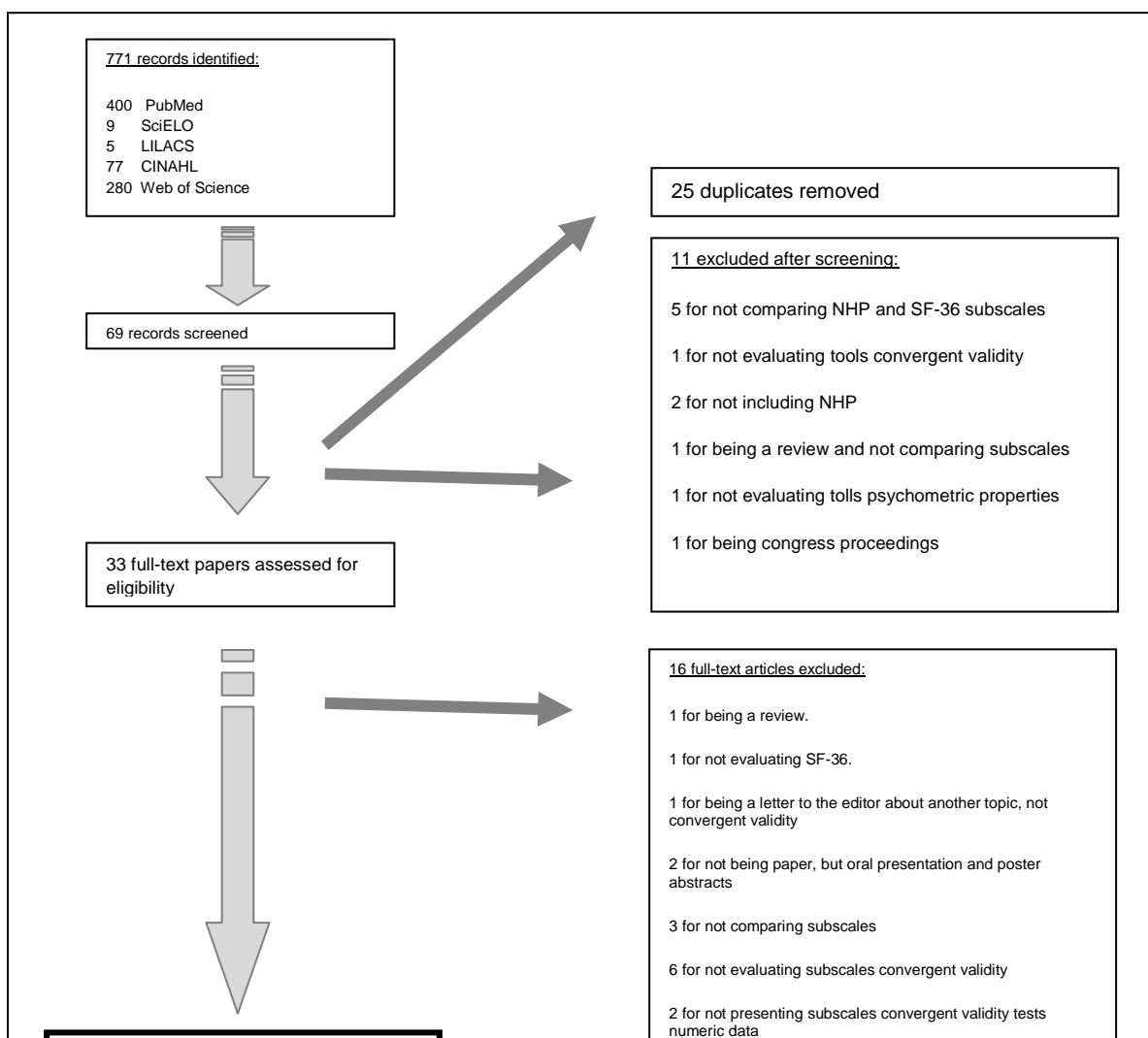
longer working in the same research group, besides it was a search considered old (2002); while the other author has not send any response until the day of this paper publication. Finally, another paper was included; which, although not identified by systematic search, presented tests for convergent validity between SF-36 and NHP subscales. Thus, 18 papers were included in the systematic review (Figure 1). Authors of these studies have been consulted about existence of unpublished studies, but all responses were negative.

Articles included were published between 1992 and 2014, mostly in English, only two in Portuguese. The diversity of included articles covers studies carried out in different locations: north and south of American continent (Cabral et al 2012; Faria et al 2011; McQueen et al 2005), Europe (Brazier et al 1992; Prieto et al 1997; Stansfeld et al 1997; Brown et al 2000; Meyer-Rosberg et al 2001; Wann-Hansson et al 2004; González et al 2005; Jagsch et al 2006; Boyer et al 2006; Hagel et al 2011; Kristofferzon et al 2013), Euro-Asia (Zengin et al 2014; Unalan et al 2009; Ozalevli et al 2008) and Oceania (Crockett et al 1996).

Such researches have been devoted to study individuals in different situations of health and illness, namely: hemodialysis patients (Zengin et al 2014), individuals with impairments of respiratory system (Crockett et al 1996; Prieto et al 1997; Ozalevli et al 2008; Kristofferzon et al 2013), individuals with stroke sequel (Cabral et al 2012; Unalan et al 2009), with hereditary neuromuscular disease (Boyer et al 2006), surviving individuals after acute myocardial infarction (Brown et al 2000) or ischemia of lower limbs (Wann-Hansson et al 2004), individuals after surgical treatment for osteo-arthritis (McQueen et al 2005), with chronic inflammatory arthritis (Hagel et al 2011), individuals with chronic peripheral neuropathic pain (Meyer-Rosberg et al 2001), individuals with different pathologies (González et al 2005), healthy elderly (Jagsch et al 2006; Faria et al 2011) and general population (Brazier et al 1992; Stansfeld et al 1997).

All included papers measured SF-36 and NHP psychometric properties. After carrying out a detailed study of each study's method, correlation tests (Pearson or Spearman) were observed as the most used statistical strategy to evaluate subscales convergence. However, before checking them, internal consistency was evaluated by Cronbach's alpha. It ranged from 0.55 to 0.88 for SF/SF-36 and from 0.34 to 0.77 for SI/NHP (Prieto et al 1997; Brown et al 2000; Meyer-Rosberg et al 2001; Wann-Hansson et al 2004; González et al 2005; Boyer et al 2006; Jagsch et al 2006; Unalan et al 2009; Kristofferzon et al 2013; Zengin et al 2014).

Concerning correlation coefficients, SF-36 presents higher scores for individuals with better HRQoL, while NHP does the opposite. As a result, some articles showed reverse correlation (negative value r), as expected (Brazier et al 1992; Crockett et al 1996; Prieto et al 1997; Stansfeld et al 1997; Brown et al 2000; Meyer-Rosberg et al 2001; Wann-Hansson et al 2004; Jagsch et al 2006; Boyer et al 2006; Ozalevli et al 2008; Unalan et al 2009), while others have preferred to invert scores to have a direct correlation (positive r value) (McQueen et al 2005; Faria et al 2011; Hagel et al 2011; Cabral et al 2012; Kristofferzon et al 2013; Zengin et al 2014). In order to ease results understanding, every time correlation coefficient was presented in reviewed papers as positive in consequence of an inversion by authors, this reversal was undone in this study. Thus, these correlations were presented with negative value (the original test result). Considering that, Spearman correlation coefficient ranged from -0.13 to -0.52, similar to Pearson, -0.29 to -0.64 (Brazier et al 1992; Prieto et al 1997; Stansfeld et al 1997; Boyer et al 2006; Jagsch et al 2006; Ozalevli et al 2008; Unalan et al 2009; Hagel et al 2011; Kristofferzon et al 2013). Only one study used intraclass correlation coefficient (ICC) to assess convergence of the studied domains, ICC was 0.29 (González et al 2005).



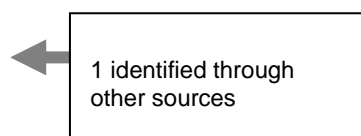


Figure 1. Systematic review papers selection flow diagram.

Table 1. Studies evaluating NHP and SF-36 social subscales correspondence in general population or in different populations with chronic disease, available in Pubmed, LILACS, SciELO, CINAHL and Web of Science data bases, published until 2014

(continues)

Author/year	Setting	Population	Cronbach's alpha SF/SF-36	Cronbach's alpha SI/PSN	Spearman	Pearson	ICC	p-value	Stronger correlation coefficient with others subscales	
									SF/SF-36	SI/NHP
Zengin 2014	Turkey	172 haemodialysis patients	0.55	0.77	-0.33	...	...	<0.01	PM/NHP r=-0.48 P/NHP r=-0.45 EL/NHP r=-0.45 ER/NHP r=-0.42 (p-value<0.01)	PF/SF-36 r=-0.35 BP/SF-36 r=-0.43 VT/SF-36 r=-0.53 MH/SF-36 r=-0.59 RE/SF-36 r=-0.42 (p-value<0.01)

Kristofferzon 2013	Sweden	83 patients with airway sensory hyperreactivity	0.86	0.71	...	-0.29	...	<0.01	...	...
Cabral 2012	Brazil	120 out-patients with chronic stroke	...	...	-0.43	...	...	<0.01	...	...
Faria 2011	Brazil	40 community-dwelling elderly	...	...	-0.41	...	...	<0.01	...	...
Hagel 2011	Sweden	216 patients with chronic inflammatory arthritis	...	...	-0.30	...	...	<0.02	...	...
Unalan 2009	Turkey	70 out-patients with chronic stroke	0.88	0.68	...	-0.24	...	<0.05	EL/NHP r=-0.34 (p-value<0.01)	BP/SF-36 r=-0.25 (p-value<0.05)
									ER/NHP r=0.40 (p-value<0.01);	VT/SF-36 r=-0.39 (p-value<0.01);
Ozalevli 2008	Turkey	130 patients with COPD	...	...	...	-0.47	...	<0.05	...	...

Table 1. Studies evaluating NHP and SF-36 social subscales correspondence in general population or in different populations with chronic disease, available in Pubmed, LILACS, SciELO, CINAHL and Web of Science data bases, published until 2014

(continuation)

Author/year	Setting	Population	Cronbach's alpha SF/SF-36	Cronbach's alpha SI/NHP	Spearman	Pearson	ICC	p-value	Stronger correlation coefficient with others subscales SF/SF-36	SI/NHP
Jagsch 2006	Austria	47 elderly gymnasts (mean age=67,7 years); 36 "young" control	0.72	0.75	...	-0.52 (idosos)	...	<0.01	EL/NHP r=-0.56	-
						-0.64 (comp)	...	<0.01	ER/NHP r=-0.60	
									ER/NHP r=-	

		group (mean age=35,9 years)				araçã o)			0.70		
Boyer 2006	France	108 people with hereditary neuromuscular diseases	0.82	0.65	...	-0.46	...	<0.001	-	MH/SF-36 r=-0.52 (p-value<0.0001)	
McQueen 2005	USA	23 patients after total knee arthroplasty	...	...	-0.13	...	...	0.559	...	...
González 2005	Spain	265 individuals with 4 selected pathologies	0.76	...	...	...	0.29	...	ER/NHP r=-0.36	MH/SF-36 r=-0.47 VT/SF-36 r=-0.32	
Wann-Hansson 2004	Sweden	90 individuals with chronic lower limb ischaemia	0.56* 0.64**	0.34* 0.73**	-0.32	...	...	...	ER/NHP r=-0.38 EL/NHP r=-0.58	PF/SF-36 r=-0.40 MH/SF-36 r=-0.47 VT/SF-36 r=-0.40	
Meyer-Rosberg 2001	Sweden	126 individuals with chronic neuropathic pain	0.70	0.59	-0.29	...	...	...	EL/NHP r=-0.42 ER/NHP r=-0.44	MH/SF-36 r=-0.47 VT/SF-36 r=-0.41	
Brow 2000	Great Britain	421 long-term survivors of a myocardial infarction	0.80	0.70	-0.52	...	...	...	EL/NHP r=-0.61 ER/NHP r=-0.59 PM/NHP r=-0.61 P/NHP r=-0.57	-	
Prieto 1997	Spain	321 mens with COPD	0.55	0.52	-0.35***	...	...	...	PM/NHP r=-0.45 ER/NHP r=-0.44 EL/NHP r=-0.47	MH/SF-36 r=-0.46	

Table 1. Studies evaluating NHP and SF-36 social subscales correspondence in general population or in different populations with chronic disease, available in Pubmed, LILACS, SciELO, CINAHL and Web of Science data bases, published until 2014

Author/year	Setting	Population	Cronbach's alpha SF/SF-36	Cronbach's alpha SI/NHP	Spearman	Pearson	ICC	p-value	(conclusion)	
									Stronger correlation coefficient with others subscales SF/SF-36	SI/NHP
Stansfeld 1997	Great Britain	186 non-industrial civil servants	...	...	...	-0.35	...	<0.001	ER/NHP r=-0.40 (p<0.0001)	-
Crockett 1996	Australia	60 patients with severe chronic airflow limitation	...	...	-0.40 (mens)	...	...	...	EL/NHP r=-0.49	MH/SF-36 r=-0.61 (p<=0.001)
										PF/SF-36 r=-0.49
					-0.21 (women)	...	...	EL/NHP r=-0.37	MH/SF-36 r=-0.48	RE/SF-36 r=-0.28
								ER/NHP r=-0.39		
								PM/NHP r=-0.48		
								P/NHP r=-0.45		
								SL/NHP r=-0.38		
Brazier 1992	Great Britain	1582 patients from a general practice list	0.73	...		-0.41***	...	...	ER/NHP r=-0.53	MH/SF-36 r=-0.47
								EL/NHP r=-0.51		

Source: papers included on the literature review.

NHP subscales: Energy Level (EL/NHP); Pain (P/NHP); Emotional Reaction (ER/NHP); Sleep (SL/NHP); Social Isolation (SI/NHP); Physical Mobility (PM/NHP).

SF-36 subscales: Physical Functioning (PF/SF-36); Role limitation caused by Physical problems (RP/SF-36); Bodily Pain (BP/SF-36); General Health Perception (GH/SF-36); Vitality (VT/SF-36); Social Functioning (SF/SF-36); Role limitation caused by Emotional problems (RE/SF-36); Mental Health (MH/SF-36).

* Value found from collection performed before treatment. ** Value found from collection performed after treatment. *** The chosen test was not specified.

...Unknown data - Correlation value lower than that found among social domains.

Table 2. Correlation coefficient between NHP and SF-36 presumed comparable dimensions when applied to different populations, available in Pubmed, LILACS, SciELO, CINAHL or Web of Science databases, published from 1996 to 2014

Author/year	PM*PF	P*BP	EL*VT	ER*MH	SI*SF
Zengin, 2014 ²	-0.76**	-0.65**	-0.64**	-0.60**	-0.33**
Kristofferzon, 2013 ¹	-0.72***	-0.72***	-0.72***	-0.75***	-0.29**
Cabral, 2012 ²	-0.82**	-0.63**	-0.47**	-0.70**	-0.43**
Faria, 2011 ²	-0.64***	-0.71***	-0.21 ^{NS}	-0.55**	-0.41***
Hagel 2011 ²	-0.30**	-0.60**	-0.50**	-0.70**	-0.30**
Unalan, 2009 ¹	-0.703***	-0.454***	-0.609**	-0.247*	-0.245*
Ozalevli, 2008 ²	-0.82**	-0.43*	-0.67**	-0.31*	-0.47*
Jagsch, 2006 ¹ (elderly)	-0.63**	-0.67**	-0.76**	-0.79**	-0.52**
(control group)	-0.69**	-0.56**	-0.81**	-0.82**	-0.64**
Boyer, 2006 ¹	-0.72***	-0.70***	-0.61***	-0.70***	-0.46***
McQueen, 2005 ²	-0.901**	-0.814**	-0.775**	-0.302 ^{NS}	-0.128 ^{NS}
González, 2005 ³	-0.62	-0.56	-0.35	-0.52	-0.29
Wann-Hansson 2004 ²	-0.46	-0.53	-0.65	-0.66	-0.32
Meyer-Rosberg 2001 ²	-0.79	-0.53	-0.67	-0.79	-0.29
Brow 2000 ²	-0.73	-0.70	-0.65	-0.61	-0.52
Prieto 1997 ^{UN}	-0.77	-0.63	-0.66	-0.65	-0.35
Stansfeld 1997 ²	-0.52****	-0.18*	-0.56****	-0.57****	-0.35****
Crockett 1996 ² (men)	-0.66	-0.14	-0.80	-0.73	-0.40
(women)	-0.53	-0.74	-0.62	-0.49	-0.21

Brazier, 1992^{UN} -0.52 -0.55 -0.68 -0.67 -0.41

Source: papers included on the literature review.

NHP subscales: PM, Physical Mobility; P, Pain; EL, Energy Level; ER, Emotional Reaction; SI, Social Isolation.

SF-36 subscales: PF, Physical Functioning; BP, Bodily Pain; VT, Vitality; MH, Mental Health; SF, Social Functioning.

¹Pearson; ²Spearman; ³Intraclass Correlation Coefficient; ^{UN}Unmentioned test.

*p<0.05; **p<0.01; ***p<0.001; ****p<0.0001 ^{NS}Não Significante.

The same aforementioned correlation tests were applied to subscales presumed as not comparable, to assess discriminant validity. In this case, it was expected to be observed lower values than those found among comparable subscales. However all included studies that made such verification found higher values between SF/SF-36 and other areas of NHP, especially EL/NHP and ER/NHP. While higher correlations were found between SI/NHP and others SF-36 domains than among SI/NHP and SF/SF-36. The domain SI/NHP often correlated more strongly with MH/SF-36 and VT/SF-36 (Brazier et al 1992; Crockett et al 1996; Prieto et al 1997; Stansfeld et al 1997; Brown et al 2000; Meyer-Rosberg et al 2001; Wann-Hansson et al 2004; González et al 2005; Jagsch et al 2006; Boyer et al 2006; Unalan et al 2009; Zengin et al 2014). Results of this review are best observed in tables 1 and 2.

DISCUSSION

This study aimed to review convergent validity between NHP and SF-36 social domains and identified both as useful and complementary but not exchangeable for evaluating HRQoL social aspects. Initially, each social domain internal consistency was investigated by Cronbach's alpha, for which, both subscales showed moderate or acceptable values, which detect that each of them evaluates what they are proposed to. Then,

convergent validity was assessed, mainly measured by Pearson or Spearman correlation coefficient.

Correlations cutoff points can vary slightly according to each author. However, Dancey and Reidy (2005), Callegari-jacques (2003), and Mitra and Lankford (1999) agree that a correlation equal to or smaller than 0.30 should be considered weak. Similarly, although Levin (1987) does not establish 0.30 as cutoff point, the author considers moderate correlation only when it approaches 0.50. Thus, values found by Zengin et al (2014), Kristofferzon et al (2013), Hagel et al (2011), Unalan et al (2009), McQueen et al (2005), Wann-Hansson et al (2004), Meyer-Rosberg et al (2001), Prieto et al (1997), Stansfeld et al (1997) and Crockett et al (1996) female group study can be considered as low correlation. As for correlation values found by other studies reviewed (Brazier et al 1992; Cabral et al 2012; Jagsch et al 2006; Boyer et al 2006; Faria et al 2011; Brown et al 2000; Ozalevli et al 2008; Crockett et al 1996), ranging between 0.40 and 0.64, these can be classified as moderate according to Dancey and Reidy (2005), Callegari-jacques (2003), Mitra and Lankford (1999) and Levin (1987) suggested cutoff.

When comparing correlation values presented in reviewed studies with cutoff points suggested by literature, finds of approximately half studies reviewed were classified as moderate correlation, while the other half was classified as weak correlation between SF-36 and NHP social domains. There is no study presenting high correlation for concerned domains. However, despite being recommended a convergence assessment based on literature suggested reference values, there is another way to evaluate coefficient correlation results: comparing them to values that would be expected to achieve. This evaluation relates to how much similarities would be expected between subscales. Since

NHP and SF-36 are different instruments, some divergence are acceptable and even expected.

For this, coefficient correlation between the two instruments social subscales was compared with correlation results of others comparable domains. Then, correlation between social subscales was repeatedly noted as the lowest among all five comparable domains in 15 papers. The only exceptions found was the comparison group of Jagsch et al (2006), the male group of Crockett et al (1996) and Stansfeld's et al (1997) group, that showed higher correlations for social domains then for pain subscales. Whereas in Faria et al (2011) study's correlation between level of energy and vitality was inferior, although not significant; and Ozalevli et al (2008) correlations between the two instruments pain domains, as well as between emotional reactions and mental health domains were also lower than correlation between social subscales. While Hagel et al (2011), had as low correlation for physical domains as for social subscales. That is, in 14 of 20 tested groups, social domains had lower correlation results than any of other four comparable domains.

The next step is to know, regarding convergence subscales, how far social domains coefficient correlation is from others domains convergence. Table 2 shows that physical mobility domain (PM/NHP) and physical functioning (PF/SF-36) (Zengin et al 2014; Cabral et al 2012; Jagsch et al 2006; Boyer et al 2006; Faria et al 2011; McQueen et al 2005; Kristofferzon et al 2013; Meyer-Rosberg et al 2001; Brown et al 2000; Prieto et al 1997; Unalan et al 2009; Ozalevli et al 2008; Crockett et al 1996), energy level (EL/NHP) and vitality (VT/SF-36) (Brazier et al 1992; Zengin et al 2014; Jagsch et al 2006; Boyer et al 2006; McQueen et al 2005; Kristofferzon et al 2013; Wann-Hansson et al 2004; Meyer-Rosberg et al 2001; Brown et al 2000; Prieto et al 1997; Unalan et al 2009; Ozalevli et al 2008; Crockett et al 1996), emotional reactions (ER/NHP) and mental health (MH/SF-36)

(Zengin et al 2014; Cabral et al 2012; Jagsch et al 2006; Boyer et al 2006; Kristofferzon et al 2013; Hagel et al 2011; Wann-Hansson et al 2004; Meyer-Rosberg et al 2001; Brown et al 2000; Prieto et al 1997; Crockett et al 1996) had a strong or moderate correlation, above -0.60 or -0.70. This was weaker among pain (P/NHP) and bodily pain (BP/SF-36) (Brazier et al 1992; Zengin et al 2014; Cabral et al 2012; Jagsch et al 2006; Boyer et al 2006; Faria et al 2011; McQueen et al 2005; Kristofferzon et al 2013; Hagel et al 2011; González et al 2005; Wann-Hansson et al 2004, Meyer-Rosberg et al 2001; Brown et al 2000; Prieto et al 1997; Stansfeld et al 1997; Unalan et al 2009; Ozalevli et al 2008; Crockett et al 1996), they presented the greatest correlation intensity variation, values ranged from -0.14 to -0.81.

Subscales with the highest number of strong correlations were physical mobility and physical functioning; which in ten of 20 reviewed groups presented correlation above -0.70. From these ten groups, three correlated above -0.80. In addition, five other groups presented moderate values, above -0.60. It were also found two tests between SF-36 and NHP total scores , with equally strong correlations coefficients, above -0.70 (Zengin et al 2014; Cabral et al 2012). These comparisons revealed social subscales correlation results are far from the grades that indicates the two instruments convergence, thus physical mobility and physical functioning may be the main reasons for this convergence. And so, NHP and SF-36, questionnaires that purport to assess quality of life within biopsychosocial approach, were being considered convergent, by studies reviewed, primarily for its biomedical aspect, while social aspect remain as a less important subject.

Concerning low correlation between social subscales, Jagsch et al (2006) pointed out low convergent validity of social subscales has always been discussed as a major limitation when comparing SF-36 and NHP (Jagsch et al 2006). However, an explanation

for low convergence of these domains was not found in reviewed literature. Only not investigated suggestions were found for that low convergence. Zengin et al (2014) suggested that SI/NHP subscale may be more related to an investigation of depression than of social aspects properly. Boyer et al (2006) believed subscales constructs are not similar, being language and items content the possible cause of these differences. Nevertheless, the author does not discuss content and language of social subscales.

Another possible explanation for the low correlation is NHP and SF-36 social subscales assessing different aspects of social issues, using different approaches. While NHP seems to investigate psychic and subjective questions related to social isolation, social domain of SF-36 seems to investigate individual's perception regarding functional performance.

Apart from low correlation between SF-36 and NHP social aspects, there is another interesting fact to be noted: higher correlations between social subscales and other presumably not comparable subscales. Social functioning domain (SF-36) had stronger correlation with EL/NHP and ER/NHP domains in respectively nine and eleven of the 12 studies reviewed that showed correlation between all subscales (Brazier et al 1992; Zengin et al 2014; Jagsch et al 2006; González et al 2005; Wann-Hansson et al 2004, Meyer-Rosberg et al 2001; Brown et al 2000; Prieto et al 1997; Stansfeld et al 1997; Unalan et al 2009; Crockett et al 1996). While SI/NHP had stronger correlation with VT/SF-36 (Zengin et al 2014; González et al 2005; Wann-Hansson et al 2004, Meyer-Rosberg et al 2001; Unalan et al 2009) in five studies reviewed and with MH/SF-36 in eight (Brazier et al 1992; Zengin et al 2014; Boyer et al 2006; González et al 2005; Wann-Hansson et al 2004, Meyer-Rosberg et al 2001; Prieto et al 1997; Crockett et al 1996). Despite these are

stronger correlations than the ones between the two social domains, they are still weak or moderate, considering the cutoff points adopted.

The fact that not all papers have exhibited this type of test is to be highlighted. Some were restricted to measure correlation between presumably comparable subscales. Highest correlation values between presumably not comparable domains shows that pre-trial domains convergence, it is "presumably comparable" classification, may be wrong.

Regarding low convergent validity between social subscales and higher convergence between social and presumably not comparable subscales, Wann-Hansson et al (2004) suggests that social isolation (NHP) is highly correlated with mental health from SF-36 for measuring more psychological aspects of social life than actually social functions. This may also help explain why social functioning (SF-36) has a higher correlation with NHP energy level, as energy of an individual is required to perform social activities. These findings suggest that SF-36 and NHP measure different aspects of physical, psychological and social activities.

Regarding higher convergence of SF/SF-36 with NHP's EL and ER and stronger convergence of SI/NHP with VT/SF-36 and MH/SF-36, Meyer-Rosberg et al (2001) explains that it may be related to each scale items, where NHP seems to be related to difficulties in making contact with others due to cognitive behavioral aspects, while loss of energy and depression resulting from chronic diseases can automatically generate greater social isolation. Thus, although there are suggested reason for low convergence between SF/SF-36 and SI/NHP, there is no consensus among authors. Nevertheless, suggestions raised by authors reviewed corroborate to the hypothesis proposed in this review that social domains of SF-36 and NHP may not correlate.

The present literature review is limited by not being able to include a larger number of databases, neither the two studies identified that although they claimed to have carried out correlation tests, they did not present numerical results. However, the main limitation relates to studies reviewed methods. Although revised authors chose correlation test as a tool to verify subscales agreement, this choice is vulnerable to strong methodological criticism (Altman et al 1983), because correlation coefficient is a measure of association, not of agreement or convergence. Consequently, correlation coefficient can provide information that does not correspond to reality when assessing agreement. Thus, further exploratory studies are needed to adopt more appropriate statistical analysis to evaluate convergence of SF-36 and NHP social domains.

Nevertheless, this study present as advantages the diversity of populations studied in terms of geographical and cultural location and clinical profile in a relatively broad time interval, converging at relative homogeny results. So that, according to literature reviewed, there is evidence of a mismatch between NHP and SF-36 social fields in general population or population with chronic diseases HRQoL assessment.

CONCLUSION

Although NHP and SF-36 social subscales have acceptable internal consistency and are suitable to assess what each of them is proposed, they do not agree. Correlation values between studied subscales are very low, indicating they are not interchangeable. Although reason for low correlation is still not clear, difference of approach and social question aspects that each domain assesses is speculated to be the cause.

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