CONSTRUCT VALIDITY OF THE HEALTH SERVICES HUMANIZATION INDEX*

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ABSTRACT: This study aimed to present the construct validity results of the Health Service Humanization Index. Methodological study to validate health assessment indicators, developed at a hospital complex and primary and specialized care services in the city of Uberaba, state of Minas Gerais. Participants were 312 workers, 211 users and 49 managers between November 2013 and March 2014. The sample adequacy measures indicated that a factorial solution is possible. Seven factors were indicated in the work dimension, seven in the user dimension and three in the management dimension. The proposed instrument complies with the recommended psychometric requisites and can be used to assess the perception of workers, users and managers about aspects of health service humanization.

DESCRIPTORS: Factor analysis; Validation studies; Care humanization; Service indicators; Data reliability.

VALIDADE DE CONSTRUTO DO ÍNDICE DE HUMANIZAÇÃO DOS SERVIÇOS DE SAÚDE

RESUMO: Objetivou apresentar os resultados do estudo de validade de construto do Índice de Humanização dos Serviços de Saúde. Estudo metodológico de validação de indicadores de avaliação em saúde, desenvolvido em um complexo hospitalar e unidades de atenção primária e especializada, na cidade de Uberaba, estado de Minas Gerais. Participaram 312 trabalhadores, 211 usuários e 49 gestores, entre novembro de 2013 e março de 2014. As medidas de adequação da amostra indicaram ser possível uma solução fatorial. Foram nomeados 7 fatores na dimensão trabalho, 7 fatores na dimensão usuário e 3 fatores na dimensão gestão. O instrumento proposto atende aos requisitos psicométricos preconizados, podendo ser utilizado para avaliar a percepção de trabalhadores, usuários e gestores sobre aspectos da humanização dos serviços de saúde.

DESCRIPTORES: Análise fatorial; Estudos de validação; Humanização da assistência; Indicadores de serviços; Confiabilidade dos dados.

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INTRODUCTION

The National Humanization Policy of Care and Management (PNH) raises the need to improve aspects of health services’ organization through humanizing measures, which result in cultural changes in the user care and work process management practices. It implies the recognition of many challenges, such as the expansion of qualitative access to health services and goods, increasingly precarious bonds and vertical management models. The program puts forward a new form of operating, translated into innovation in the organizational dynamics, demanding further deepening of the evaluation perspective (1-3).

Evaluation is part of the planning and management of the health system. Because of its complexity, humanization demands the creation of indicators that can dimension not only the health and disease situation, but also the repercussions at other levels of subjects’ representation, including subjective repercussions. As a part of the public policies and to enhance the visibility of the priorities and resources applied in different scenarios, humanization should be considered in the context of assessment (3).

The development of assessment research supports the planning and strategies to implement health actions. It contributes to the elaboration of public policy assessment methods, in line with the principles of the Unified Health System (SUS), as well as to the development of indicators that can support management practices intended to achieve greater efficacy, quality and efficiency (3).

The Health Service Humanization Index (IHS) is intended to validate a quantitative research tool that aims to measure the degree of humanization at health services. In that sense, “the validity criteria of scientific research instruments are a fundamental tool that is part of methodological rigor (4:227). Validation studies are widely used in research in different knowledge areas in international literature.

Using one or more variables, a construct expresses the actual theoretical meaning of a concept. “The construct validity refers to the extent to which a measure is consistently related with other similar measures deriving from the same theory and concepts being measured” (5:7).

In view of the importance of humanization actions and the need to assess the PNH as a public policy, this research aims to present the results of the construct validity study of the Health Service Humanization Index (IHS).

METHODS

A quantitative study with a methodological approach was undertaken. The sites chosen were a teaching hospital with 290 beds and a municipal primary care and specialized outpatient service in the city of Uberaba, state of Minas Gerais, Brazil. In October 2013, 1,545 health workers and 72 managers were employed at this service.

Ordinal Likert scales with four alternative answers were used, two of which refer to a positive assessment and two to a negative assessment. The variables included were defined by means of the Delphi technique during a phase preceding this research. For each variable, a set of statements was formulated that can estimate its content. The principle was adopted that the respondent should express his/her opinion on conditions related to the humanizing guidelines at the investigated health services.

The simple random sample criterion was applied to select the participants. To calculate the sample size, two criteria were used: the first was a formula that complied with the following criteria: qualitative variable, finite population, significance level (95%), maximum sampling error tolerated (5%), and 50% wrong answer x right answer outcome; the second was the minimum number of variables questioned.

The criteria to include the research participants were: a) tenured health managers and employers working at the institution; and b) users attended at the service in proper cognitive conditions and favorable clinical conditions to understand the orientations and answer the questionnaire. The exclusion criteria were: Professionals on leave from the service for different reasons (holidays, leave of absence and others). All the participants signed the Free and Informed Consent Form. The Research Ethics Committee at Universidade Federal de São Paulo – UNIFESP approved the research in Opinion
The data were collected between November 2013 and February 2014. A work plan was elaborated, containing information about sectors, data and times scheduled for the data collection and subjects previously drawn to participate in the research. With this information at hand, the researchers visited the collection sites and contacted the responsible head, providing information on the procedures. Next, they invited the participants to answer the questionnaire.

After the data collection, the data were coded, included in an electronic worksheet through double data entry and transferred to statistical software. The multivariate statistical technique of factor analysis was used, which is intended to reduce a set of variables to another smaller and more controllable set, permitting its understanding\(^6\). Sample adequacy was measured using the determination criteria of the correlation matrix, the Kaiser-Meyer-Olkin (KMO) sample adequacy measure, Bartlett’s sphericity test and the internal consistency measure.

The data were analyzed in the following order: a) assessment of the data through exploratory factor analysis (R technique); b) correlation of the variables using principal components extraction; c) confirmation of data reliability and validity through sample adequacy tests and Cronbach’s alpha tests; d) varimax rotation of the factors; e) analysis of factorial matrix, ranking the factors in terms of impact on the health service humanization.

RESULTS

After the selection of the participants, 572 questionnaires were applied, being 312 to health professionals, 211 to users and 49 to managers. In Table 1, the sample adequacy is verified, as the determinant of the correlation matrix obtained very high coefficients, indicating considerable correlation among the variables, as confirmed by Bartlett’s sphericity and Cronbach’s alpha tests. These coefficients reject the null hypothesis that they are not associated. On the opposite, they confirm that a statistically significant association exists, which indicates that the data matrix is adequate to the factorial matrix.

In Table 2, the factorial matrix in the work dimension is displayed, which includes seven factors.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Work</td>
</tr>
<tr>
<td>Cronbach’s alpha</td>
<td>.881</td>
</tr>
<tr>
<td>Kaiser-Meyer-Olkin sample adequacy measure</td>
<td>.884</td>
</tr>
<tr>
<td>Bartlett’s sphericity test</td>
<td>2,188.148</td>
</tr>
<tr>
<td>Approx. chi-square</td>
<td>325</td>
</tr>
<tr>
<td>Sig.</td>
<td>.000</td>
</tr>
</tbody>
</table>

Table 2 – Factorial matrix in the work dimension. Uberaba, MG, Brazil, 2014 (continues)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Items</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General factor of compliance with PNH</td>
<td>The professionals are treated in the same way</td>
<td>.704</td>
</tr>
<tr>
<td></td>
<td>The institution prioritizes the implementation of PNH devices</td>
<td>.679</td>
</tr>
<tr>
<td></td>
<td>Technological resources made available</td>
<td>.675</td>
</tr>
<tr>
<td></td>
<td>Institution offers career plan</td>
<td>.597</td>
</tr>
<tr>
<td></td>
<td>Safe work environment</td>
<td>.597</td>
</tr>
<tr>
<td></td>
<td>Identification of professionals</td>
<td>.522</td>
</tr>
</tbody>
</table>
2. Satisfaction with work and professional acknowledgement

- Feeling of accomplishment through work: .714
- Satisfaction with salary received: .697
- Work is acknowledged and valued: .645
- Satisfaction with service management: .445
- Autonomy to perform the work: .409

3. Communication and management support

- Efficient communication in the team: .726
- Opening to discuss suggestions: .705
- Commitment of management: .661

4. Environmental conditions and material resources for work

- Cleaning and hygiene of workplace: .750
- Signaling of work environment: .717
- Material resources for work: .535

5. Knowledge on coverage area of service and municipal care network

- Number of workers at the service: .657
- Integration among interdisciplinary team members: .570
- Knowledge of care network in the service’s coverage area and of the municipal care network: .499
- Institution develops quality of life actions: .469

6. Opportunity for participation and knowledge of hierarchical level

- Knowledge of institutional chart: .680
- Opportunity to participate in educative activities: .572
- Knowledge on persons occupying the hierarchy: .539
- Opportunity to give suggestions: .517

7. Coverage of other sectors

- Coverage of other sectors: .869

Factor 1, called “general factor of compliance with PNH”, corresponds to the unanimous treatment granted to the professionals, the implementation of the PNH devices, access to a career plan and technological resources at work, safe work environment and professionals, identified as the most important factor for the humanization of the work conditions.

The health professionals who participated in the research chose the “satisfaction with work and professional acknowledgement” as the second most important factor. The third factor grouped the variables: efficient communication in the team, opening to discuss suggestions and commitment of the management. The factor was named “communication and management support”.

The following variables were included in factor 4: hygiene, signaling at the service and material resources for work. This factor was named “environmental conditions and material resources for work”.

Next, the number of workers and their integration in the multiprofessional health team, the knowledge of the service’s coverage area and the city’s care network figure as the fifth most important factor for the humanization of the work conditions.

The one-but-last factor according to the workers was named “opportunity for participation and knowledge on the hierarchical level”. It covers the variables related to the knowledge on the hierarchical levels, as well as the persons who occupy them and the opportunity to participate in the educational activities and to give suggestions. The final factor included only the variable “coverage of other sectors”. In Table 3, the factorial matrix in the user dimension is displayed.

Table 3 reveals that the users evidenced the following aspects recommended at the institution as the most important: supply of devices, participation in management, supply of play activities and access to ombudsman services. The second factor included the variables related to the problem-solving ability and trust in the service. These factors were called “visibility of PNH at the service” and “problem-solving ability and trust in the service”, respectively.

Named “welcoming”, the third factor includes the variables related to the way the user is received and treated at the service and the provision of dignified and respectful care. The fourth factor contains the variables related to “information provided to the user”. The variable “respect for the user’s beliefs” was related with the factor, although with a lower factor loading.
Table 3 – Factorial matrix in user dimension. Uberaba, MG, Brazil, 2014

<table>
<thead>
<tr>
<th>Factors</th>
<th>Items</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Visibility of PNH at the service</td>
<td>Supply of PNH devices</td>
<td>.818</td>
</tr>
<tr>
<td></td>
<td>Participation in management</td>
<td>.816</td>
</tr>
<tr>
<td></td>
<td>Supply of playful activities</td>
<td>.706</td>
</tr>
<tr>
<td></td>
<td>Access to ombudsman service</td>
<td>.657</td>
</tr>
<tr>
<td>2. Problem-solving ability and trust in the service</td>
<td>Problem-solving ability</td>
<td>.873</td>
</tr>
<tr>
<td></td>
<td>Fast and problem-solving care</td>
<td>.866</td>
</tr>
<tr>
<td></td>
<td>Trust in the service</td>
<td>.510</td>
</tr>
<tr>
<td>3. Welcoming</td>
<td>Dignified and respectful care</td>
<td>.895</td>
</tr>
<tr>
<td></td>
<td>Welcoming; form of reception at the service</td>
<td>.892</td>
</tr>
<tr>
<td>4. Information provided to the user</td>
<td>Information about service functioning, procedures and tests</td>
<td>.829</td>
</tr>
<tr>
<td></td>
<td>Signaling of the environment/service</td>
<td>.557</td>
</tr>
<tr>
<td></td>
<td>Appropriate information and clarification of doubts</td>
<td>.534</td>
</tr>
<tr>
<td></td>
<td>Respect for users’ beliefs</td>
<td>.366</td>
</tr>
<tr>
<td>5. Secrecy and confidentiality</td>
<td>Respect for privacy</td>
<td>.827</td>
</tr>
<tr>
<td></td>
<td>Secret and confidential attendance</td>
<td>.784</td>
</tr>
<tr>
<td>6. Ambience</td>
<td>Cleaning and hygiene at the service</td>
<td>.769</td>
</tr>
<tr>
<td></td>
<td>Comfortableness</td>
<td>.581</td>
</tr>
<tr>
<td>7. Knowledge and identification of the professionals</td>
<td>Identification of professionals</td>
<td>.566</td>
</tr>
<tr>
<td></td>
<td>Knowledge of the team responsible for care/treatment</td>
<td>.536</td>
</tr>
</tbody>
</table>

The fifth, sixth and seventh factors include the variables of private and confidential care delivery (factor 5), ambience (factor 6) and visual identification of the professionals (factor 7). In Table 4, the factorial matrix in the management dimension is displayed.

In Table 4, the health managers’ attitude towards the PNH’s influence at the services where they work is presented. Factor 1 includes variables that represent the impact of listed principles in the health services, such as aspects related to the form of attendance to the user, whether users have access to financial information and treatments provided. It focuses on aspects related to the service structure and management, such as the effectiveness of practices, quality requisites and horizontal power lines at the institution. This factor was named “visibility of PNH principles at the service”.

Table 4 – Factorial matrix in management dimension. Uberaba, MG, Brazil, 2014

<table>
<thead>
<tr>
<th>Factors</th>
<th>Items</th>
<th>Loading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Visibility of PNH principles at the service</td>
<td>Welcoming and problem-solving attendance</td>
<td>.770</td>
</tr>
<tr>
<td></td>
<td>Work processes comply with the quality requisites of health</td>
<td>.762</td>
</tr>
<tr>
<td></td>
<td>Objective evidence that health practices are effective and efficacious</td>
<td>.689</td>
</tr>
<tr>
<td></td>
<td>Users have access to financial information and treatments provided</td>
<td>.674</td>
</tr>
<tr>
<td></td>
<td>Priority of governmental instances in the implementation of the PNH</td>
<td>.602</td>
</tr>
<tr>
<td></td>
<td>Horizontal command lines</td>
<td>.565</td>
</tr>
<tr>
<td></td>
<td>Policy to reduce queues</td>
<td>.475</td>
</tr>
<tr>
<td>2. Impact of PNH guidelines on service management</td>
<td>Access to financial resources to implement PNH devices</td>
<td>.882</td>
</tr>
<tr>
<td></td>
<td>Participatory management with users and workers</td>
<td>.655</td>
</tr>
<tr>
<td></td>
<td>Management logic privileges the implementation of the PNH</td>
<td>.515</td>
</tr>
<tr>
<td>3. Access to religious services</td>
<td>Users have access to religious services</td>
<td>.891</td>
</tr>
</tbody>
</table>
The managers elected variables related to the access to financial resources, user and worker participation and management logic focused on PNH as the second most important factor. Overall, it can be affirmed that the “impact of the PNH guidelines on service management” represents the second most important factor. The variable “users have access to religious services” was isolated in the third factor.

After finding a confirmatory factorial solution, a meaning was attributed to the factors by means of efforts to name each of them. Variables with higher factor loadings influenced the selection of the name or label to represent each factor.

**DISCUSSION**

The construct validity refers to the extent to which a measure is consistently related with other similar measures, deriving from the same theory and concepts(5). The validation techniques used in this research help to assess if the variables are scientifically meaningful and guarantee the exactness needed for the analyses and conclusions they target.

The reliability represents the extent to which a variable is consistent with what it intends to measure. Instruments intended to assess the humanization should take into account the broad situations that can be measured in that context, objective data, concrete results, but also the transformation in the process itself, in the dynamics of the services, in the users’ interaction(3). Cronbach’s alpha was adopted as a reliability measure in this research and was considered consistent.

In Tables 2, 3 and 4, the categories of factors were displayed by order of variance in the three dimensions investigated. The first factor rotated in the three dimensions reflects the variables related to the degree of compliance with the PNH guidelines and its visibility in the health services. Health service management plays a fundamental role with regard to visibility, while humanization is only made real at an institution when its managers adopt it as a management model. Punctual actions do not sustain humanization as a transforming process. “The instruments that truly guarantee this process are: information, continuing education, quality and participatory management”(7:257).

Perception is a broad concept, directly related with the expectations and experiences related to the disease and health care. In the hospital environment, the theme is complex and entails “several implications, ranging from the understanding of what humanization is to the operation of something apparently simple that does not take place, such as good communication among user, professionals and managers”(8:822). Developing humanization based on ethics and respect for the health professionals contributes to a better understanding of the theme.

The health professionals chose satisfaction with work and professional acknowledgement as the second factor for the humanization of work. Satisfaction with work results from the complex interaction among the “general conditions of life, the work relationships, the work process and the workers’ control of their life and work conditions”(9:77). It can be a source of wellbeing and cause losses to the “physical, mental and social health, entailing problems for the work organization and environment”(9:77). This unfavorable environment affects the relational aspects between professionals and users, resulting in a frail situation for the humanization of care(10).

The users elected the problem-solving ability and trust in the service as the second most important factor. The first is the ability of the service to solve problems, being one of the requisites for humanized practices. Its assessment is based on the outcomes of user care. According to the hierarchized health care model, the services should be capable of responding to the demands or forwarding the users to other care levels(11). The users’ trust in the health service improves the acceptance of teamwork, providing more reliable data and enhancing the popular mobilization and the struggle for rights and claims(12).

The impact of the PNH guidelines on service management was chosen as the second most important factor in the managers’ view. The classical management model strongly influences the health service organization, which does not always guarantee the effectiveness of the health professionals’ practices. As a result, the workers’ discouragement and the users’ low levels of participation are observed(13). As
opposed to the traditional hegemonic model, the PNH proposes the adoption of a management model centered on teamwork and collective construction, which guarantee the true sharing of the power\(^{(14)}\). The humanization actions are presented as a competitive and qualitative differential, improving the management practices, physical environment, quality and problem-solving ability of care, enhancing the satisfaction and financial return of the company\(^{(15)}\).

The third factor in the health professionals’ perception refers to communication and support from the head. The communication problem has figured on the health agendas, as bottlenecks compromise the quality of care and keep the professional hostage to inappropriate conditions, which frequently cause exhaustion and mental suffering\(^{(16)}\).

In the users’ opinion, welcoming was elected as the third most important factor in humanization. They considered that overcoming the difficulties at the health services was a challenge. Welcoming was a tool “capable of reducing the users and professionals’ levels of dissatisfaction, as it speeds up the service provided to the client, acknowledges priorities and provides for due forwarding for the sake of the continuity of the users’ treatment”\(^{(17:88)}\).

According to the managers, the users’ access to religious services represented the third factor in the management dimension. This variable was not related with the others, despite the use of factorial techniques that cluster the variables in factors. We interpret the managers’ position in the following aspect: as the institution assumes the commitment to offer services, it should also provide the whole structure needed for this purpose, such as physical area, maintenance costs and the flow of persons within the institution, which influences the safety and hospital infection control for example. There are other aspects, such as the religious diversity in the Brazilian population. It is highlighted that the access to religious services is a relevant factor for humanization according to the PNH\(^{(2)}\).

The environmental conditions of work (cleaning, hygiene and signaling) and the material resources for work were combined in the fourth factor. “The problem in many places is the lack of technical conditions, either for training, materials and, as a result, the environment becomes hardly humanized due to the resulting bad quality and bad problem solving ability”\(^{(18:281)}\).

For the users, the fourth factor is related to the information provision at the service. Improvements to enhance the communication level represent one of the core guidelines of the PNH\(^{(2)}\). Through efficient communication, the debate and disclosure of ideas take place that contribute to the construction of humanizing projects, in tune with public policies in the health area.

For the health professionals, knowing the care network and the coverage area figured as the fifth factor. That is a geographical area of origin of the individuals who bond and relate with a health service. The health care network is responsible for the integration and relationship among the different services. It is a heterogeneous network, “produced by the intertwining that takes place among different actors, services, movements, policies in a given territory”\(^{(19:9)}\). The encouragement of networks in the SUS has been the main objective of all PNH actions.

According to the users, the fifth factor stands out for the guarantee of secrecy, confidentiality and privacy, which should be guaranteed to all users, except in cases of group interest. Privacy refers to “the protection of the patient’s intimacy, which can often be guaranteed by using screens or even curtains and mobile elements”\(^{(20:11)}\). Such simple measures result in “integration and privacy, facilitating the work process, enhancing team interaction and at the same time permitting personalized care”\(^{(20:11)}\).

According to health workers and users, democratic participation and ambience figures as the sixth factor. The PNH highlights the importance of participatory management at the services, promoting the democratization of work relationships\(^{(2)}\). Ambience “enhances and facilitates the capacity to act and reflect of the stakeholders in the work processes, permitting the production of new subjectivities”\(^{(20:12)}\). Inappropriate environmental conditions produce discomfort and dissatisfaction among clients internal and external to the health services.

The workers chose the variable coverage of other sectors as the final factor in the work dimension. We believe that this situation is specific to some professional categories, such as Nursing, Nutrition and Community Health Agents, without extending to the others. The quality of the method used is observed here, which is sensitive to the variations among the professionals with different realities in
the work environment.

The users chose the professionals’ identification and the knowledge of the team responsible for the treatment as the least relevant factor. It is highly probable that, according to the user, the identification of the professionals is less important than that many other relevant aspects. For the professionals, the PNH principles recommend treating the users by their name and knowing the referral team responsible for their care\(^2\).

**CONCLUSION**

The exploratory factor analysis indicated that the proposed tool complies with the recommended psychometric requisites, presenting sufficient internal consistency characteristics to assess the workers, managers and users’ perception of humanization aspects at health services.

The need for further validation in other health services and other realities is observed at all care levels, permitting the comparison of the obtained results and the understanding of the priorities in the work, management and user segments of health services at all care levels.

The research results are promising, as they indicate that the set of variables selected can measure the humanization level in health services, being valid and reliable for what it is proposed to measure.

**REFERENCES**


11. Turrini RNT, Lebrão ML, Cesar CLG. Resolutividade dos serviços de saúde por inquérito domiciliar: percepção...


