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CONSTRUCTION AND VALIDATION OF A PUBLIC PROGRAM OF MATERNAL AND CHILD HEALTH INSTRUMENT EVALUATION[1]

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ABSTRACT
This article presents the construction and validation of a Maternal and Child Health Public Program Evaluation Framework. Quantitative and evaluative research, conducted across Systems of Information in Health, related to55 municipalities, which comprises 9th,10th and 17thHealth Regions of Parana State, in the two years that anteceded and succeeded the implantation of the Programa Rede Mãe Paranaense. For the data analysis, it was used factorial analysis. The instrument included 22 variables that were distributed in five domains: Consultation and Maternal Prevention, Child Follow-up, Management, Infant Mortality and Risk. The results confirmed the validity and reliability of data, with a Cronbach's alfa of 0.839. The evaluation framework of this study showed to be useful for the Evaluation of the Programa Rede Mãe Paranaense and has potential to be used for other Public Programs of Maternal and Child Health.

Keywords: Program evaluation. Health evaluation. Validation studies. Primary health care.

INTRODUCTION

The Brazilian health situation is characterized by an accelerated demographic transition, expressed by a triple burden of diseases, which includes an unmanagable load of infectious diseases and deficiencies, external causes and a prominent presence of chronic conditions. There were attempts to resolve this health situation through a system of fragmented and reactive attention focused on the confrontation of acute conditions and exacerbation of chronic conditions, with obvious failures in achieving success. Opposing this reality exists the organization of the system in the form of Health Care Networks (HCNs) in an integrated mode to resolve the health conditions of the population proactively, effectively, efficiently and with quality(1).

Established by Ordinance GM No. 4,279/2010, the HCNs are organizational arrangements of functional health units, points for assistance and diagnostic as well as therapeutic support, whereprocedures with different technological densities, integrated by means of support and management systems are developed, whichaim to guarantee the completeness of the care and solve the problems of the population(1,2). In this context, the contact between the various points of assistance in the health care system must occur through effective integration, coordinated within these services by thePrimary Health Care (PHC), for all the users' health needs.

In the last three decades, Brazil went through a lot of changes in terms of socio-economic development, urbanization, medical assistance and health of the population, with great impact on maternal and child health. Attention to this

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population became more prominent in the public agenda and several vertical health programs have been implemented (promotion of breastfeeding, immunization, comprehensive care to women during pregnancy, childbirth and the puerperium and the child in the first year of life). The monitoring of the health of children is essential to evaluate the impact of social and economic changes, as well as any possible advances and setbacks in the availability and quality of services[3].

In 2012, the Secretary of Health of the state Paraná has deployed the Network Program Paraná Mother (NPPM)[4].The priority of the developed actions was based on the analysis of maternal and child mortality indicators that presented increase or a slight reduction, bordering on stagnation in recent years: the Maternal Mortality Ratio (MMR) in Paraná was in 2002 57.64/100,000 live births (LBs) and in 2010 it was 65.11/100,000 LBs. Infant Mortality (IM), which in 2002 presented 16.72/1,000 LBs decreased, in 2010, to 12.15/1,000 LBs[4]and remains close to this index.

These indicators have reached a level that demands a greater complexity of actions. Given this, the NPPM has established a set of actions, including early admission of the pregnant women, carrying out at least seven prenatal consultations, the risk stratification of pregnant women and children, the specialized ambulatory attendance and linking of pregnant women to referral hospitals according to the respective risk. These actions, together with the analysis of the indicators of maternal and child mortality, areprerequisites for the organization and operation of the Network Paraná Mother[4].

To identify the extent and the achievement of the NPPM prerequisites and ascertain the effect that this deployment is causing to public health what is aimed at, it is necessary that there is a systematic evaluation of this process. Given this, this study aims to present the development and validation of an instrument for evaluating the Network Program Paraná Mother.

METHODOLOGY

The study is part of a multicentric project named "Analysis of the Deployment and Development Process of the Network Program Paraná Mother", funded by the CNPq, which worked with 55 municipalities of three Regional Health Centers (RHCs) in the state Paraná, being: the 9th RHC, based in Foz do Iguaçu, comprising nine municipalities, the 10th RHC, in Cascavel, covering 25 municipalities and the 17th RHC in Londrina, with 17 municipalities.

DEVELOPMENT OF THE INSTRUMENT

Contemplating the prerequisites established in the NPPM Guideline[4] and initially including 16 questions, with 75 variables for evaluation. After verification of its applicability through national health data information systems, the instrument remained with ten questions, distributed in 22 variables, presented in Chart 1.

DATA COLLECTION

The data collection was developed in all municipalities of the 9th, 10th and 17th RHC, referring to previous years of the implementation of the program (2010 and 2011) and later ones (2012 and 2013), from monthly and annual reports issued by each municipality for the national information systems of health data on prenatal care (SISPRENATAL) and the follow-up of the child, namely: Information System of Live Births (BIRTH CERTIFICATES), National Immunization Program (NIP) and Infant Mortality Information System (IMIS).

VARIABLES

The health indicators were categorized into three levels: 0-nonexistent information in information systems; 0.5-existing information with a following risk stratification; 1-existing information, but partly in agreement with the guideline[4]; and 2-existing information, in accordance with the guideline[4], according to Chart 2 below.

Chart 1. Instrument with questions defined a priori and afterwards checking the applicability in the databases. Cascavel, PR, 2015.

Questions defined a priori	Remaining issues (final instrument)
1. Numberofpregnant women registered in the municipality 2. Ensure all pregnant women a prenatal assistance with quality 2.1 Medical consultations 2.2 Consultations with a nurse 2.3 Dental consultations 2.4 Immunization of the pregnant women 2.5 Accomplished tests 3. Identifythe pregnant women within the first trimester of pregnancy 4. Standardize the use of the authorization card of the pregnant women 5. Risk stratificationof pregnant women 5.1 Implement the risk stratification of pregnant women – Regular, Intermediate orHigh Risk 5.2 Ambulatory attendance of pregnant women at risk 5.3 Referral hospital for the pregnant women with Regular or intermediate risk 5.4 Referral hospital for the pregnant women with high risk 6. Contractualization of hospitals for linking the maternal delivery according to the risk stratification to the hospital best suited to the respective condition in accordance with the typology established by SESA. 7. Establish quality childbirth incentive 7.1 Caesarianand normal deliveries 7.2 The contractual hospital receives incentives according to contract when it reaches stipulated targets 8. Deploy Research Committee for maternal deaths in the municipality 9. Number of registered children aged 0 to 2 years in the municipality 10. Implement the risk stratification of children under 1 year – Regular, IntermediateorHigh Risk 11. Accompanythe growth and development of the child according to risk stratification 12. Standardize the use of the child's authorization card 13. Guarantee every child the attendance with quality 13.1 Medical consultations 13.2 Consultations with a nurse 13.3 Dental consultations 13.4 Immunization of the child 14. Deploy Research Committee for infant deathsin the municipality 15. Participate with the respective health professional in the training offered by SESA 16. Ensure that the laboratories for clinical analyses feed the management system for laboratory environment together with the Central State Laboratory – LACEN	1. Number of pregnant women registered with SISPRENATAL in the municipality: 1.1 Number of pregnant women 1.2 Total number of consultations 2. Number of accomplished tests per trimester 2.1 1st trimester 2.2 2nd trimester 2.3 3rd trimester 2.4 Quick test for syphilis 2.5 Quick test for pregnancy 2.6 Quick test for HIV 3. Risk stratification of pregnant women 3.1 Municipality implementedtherisk stratification of pregnant women (Regular, IntermediateandHigh Risk) 4. Contractualization of hospitals for linkingthe maternal delivery according to the risk stratification to the hospital in accordance with the typology established by SESA (Regular, IntermediateandHigh Risk) 5. Established quality incentive at delivery (amountof normal deliveries and Caesarean sections) 6. Maternal mortality 6.1 Maternal mortality indicators 7. Child registration (number of childrenborn alive according toBIRTH CERTIFICATES) 8. Infant mortality 8.1 Early Neonatal Mortality 8.2 Late Neonatal Mortality 8.3 Post Neonatal Mortality 9. The municipalityhas a committee for analysis of maternal and child deaths 10. Total number ofvaccination doses applied in children under 1 year of age according to NIP, per municipality

Source: research database

Chart 2. Adopted levels for each variable of the data collection instrument. Cascavel, PR, 2015.

Questions	Variable	Levels adopted
1 and 2	"Consultations" and "Prenatal Care"	1 – Number of consultations and number of quick tests below 100% 2 – Number of consultations and quick tests above 100%
3	"Stratification"	0,5 – Municipality adheredto one type of risk 1 – Municipality adhered totwo types of risk (Regular and High Risk) 2 – Municipality adhered to risk stratification (Regular, Intermediateand High Risk)
4	"Contractualization"	1 – Hospital adheredto the contract terms with the municipality for regular and high risk 2 – Hospital adhered to the contract terms with the municipality for the three risks (Regular, Intermediate and High Risk)
5	"Childbirth"	1 – Municipality presented more than 15% Cesarean sections 2 – Municipality presented less than 15% Cesarean sections, as established in the NPPM Guideline[4].
6*	"Maternal Mortality"	1 – MMMabove 20/100,000 LBs, as established in the NPPMGuideline[4]. 2 – MMRbelow 20/100,000 LBs
8.1*	"Early Neonatal Mortality" (0 to 6 days)	1 – Infant Mortality Coefficient above 6.78/1,000 LBs** 2 – IMC below 6.78/1,000 LBs**
8.2*	"Late Neonatal Mortality" (7 to 27 days)	1 – IMC above 2.00/1,000 LBs** 2 – IMC below 2.00/1,000 LBs**
8.3*	"Post-Neonatal Mortality"	1 – IMC above 3.31/1,000 LBs** 2 – IMC below 3.31/1,000 LBs**
9	"Committee"	1 – Municipality does not have a Research Committee for maternal and child deaths 2 – Municipality has a Research Committee for maternal and child deaths
10	"Immunization"	1 – Vaccination coverage below 100% 2 – Vaccination coverage equal to or above 100%, as established in the Guideline[4].

* ICM and MMR are calculated by dividing the number of deaths to be verified by 1,000 LBs and 100,000 LBs, respectively[5], thus using the data from question 7 which relates to the number of LBs for the calculation of questions 6 and 8. ** The weights used are in accordance with the NPPM Guideline and the adopted indices relate the year 2011[4].

STATISTICAL ANALYSIS

The information was submitted to factorial analysis, which is part of the family of structural equation models, classified as subtype of measurement models, that describes the relations between the domains (latent variables) and its indicators (observed variables)[6].

This analysis reduces the original data set in a new array, with variables called factors and/or domains, being such extraction performed through a key component analysis[7], which is related to the explanation of covariance structure by means of linear combinations of the original variables. It aims to reduce the original dimension of the variables and the facilitation of the interpretation of accomplished analyses. This reduction promotes less information loss through a linear transformation of a p-dimensional space to a k-dimensional space[6].

Before proceeding with the factorial analysis, acceptable correlation levels between the variables were verified through the Kaiser-Meyer-Olkin Test (KMO) and Bartlett's Sphericity Test, whose values must be greater than 0.5. These tests verify the adequacy of the data for the application of the factorial analysis. The internal consistency among the 22 variables was evaluated through Cronbach's Alpha[8], consisting of a coefficient responsible for measuring the reliability of items, considered acceptable with a minimum value of 0.70[9,10].

The research was developed in accordance with the requirements of the resolution 466/12 of

the National Health Council and the project was approved by the Committee for Ethics in Research (CER) with human beings under opinion nº 544.107/2014.

RESULTSAND DISCUSSION

To assess the quality of the data was verified the presence of correlations and intercorrelations between the variables (Bartlett Test, $x^2 = \infty$; GL = 231; $p < 0.05$), with a KMO value of 0.618, suggesting good suitability for factorial analysis. The internal consistency was considered high, with a Cronbach's Alpha coefficient value equal to 0.839.

After checking the quality of the data base, the eigenvalues, which represent the variability of each of the factors as well as the percentage of variance explained by the factor, were determined. The aggregate domains from the factorial analysis were not defined a priori, but resulting from the application of the analysis. In domain 1, the factorial analysis added indicators that characterized a domain called 'Consultations and Maternal Prevention', with eigenvalue equivalent to 7.09 and explanation variability of 32.25%.

Domain 2, whose indicators characterize the domain 'Follow-up of the Child', obtained eigenvalue of 3.91 and variability of 17.79%. Domain 3, with indicators of the domain 'Pregnancy', presented eigenvalue of 2.00 and variability of 9.13%. Domain 4 added indicators of the domain 'Infant Mortality', with eigenvalue of 1.31 and variability of 5.91%. And finally, domain 5 added indicators of the domain 'Risk', with eigenvalue of 1.04 and variability of 4.74%.

Five factors or domains were defined through the Latent Source Criterion, which selects the factors whose eigenvalues are greater than or equal to one, meaning the other factors were eliminated. In light of this criterion, it was possible to observe that these five factors correspond to 69.89% of the total variability. To match each original variable in new factors we used the criterion of highest value of cosine squared[6], being shown in table 1, by means of factorial significance which constitute the definition criterion of the domains based on the linear combinations of the original variables.

In table 1 it is verified that the variable "Late Neonatal Mortality Score" presents very close correlation values for factors 3 and 4. Given the nature of the indicators and their association with other variables, it was decided to include this variable infactor 4, related to Infant Mortality.

Table 1. Factorial significance in the combination of the factors. Cascavel, PR, 2015.

Variables/Factors	F1	F2	F3	F4	F5
Number of consultations / Number of pregnant women	**0.826**	-0.028	0.087	-0.124	-0.015
Tests 1st tri / n pregnant women	**0.977**	0.130	0.119	0.071	0.030
Tests 2nd tri / n pregnant women	**0.977**	0.130	0.119	0.071	0.030
Tests 3rd tri / n pregnant women	**0.977**	0.130	0.119	0.071	0.030
Syphilis / n pregnant women	**0.973**	0.115	0.125	0.059	0.034
Management / pregnant women	**0.977**	0.130	0.119	0.071	0.030
HIV / pregnant women	**0.973**	0.115	0.125	0.059	0.034
Hepatitis B	0.101	**-0.842**	0.049	-0.035	0.027
Pentavalent	0.058	**-0.811**	0.273	0.182	0.034
Sabin or Salk	0.021	**-0.815**	0.257	0.151	-0.017
BCG	-0.121	**-0.354**	0.328	0.036	-0.162
VTV	0.259	**-0.519**	-0.070	-0.108	-0.198
Yellow fever	0.213	**-0.619**	-0.259	-0.179	0.050
Rotavirus	0.068	**-0.720**	-0.008	-0.024	0.094
Pneumococcal pneumonia 10	0.347	**-0.629**	-0.125	-0.151	-0.210
Stratification	0.456	0.004	**-0.616**	-0.393	-0.180
Contractualization	0.449	-0.090	**-0.686**	-0.184	-0.186
Late Neonatal Mortality Score	0.118	-0.138	**-0.545**	**0.439**	0.187
Early Neonatal Mortality Score	0.036	-0.090	-0.214	**0.712**	-0.324
Post-NeonatalMortality Score	0.062	0.022	-0.262	**0.470**	0.162
Childbirth	0.104	-0.142	0.235	-0.187	**0.577**
Maternal Mortality Score	-0.005	-0.207	-0.508	0.036	**0.591**

Source: Research database. Cascavel, PR, 2015.

Figure 1 Demonstrates the factorial analysis ordination diagram, which represents the interrelations of the variables for the respective domains.

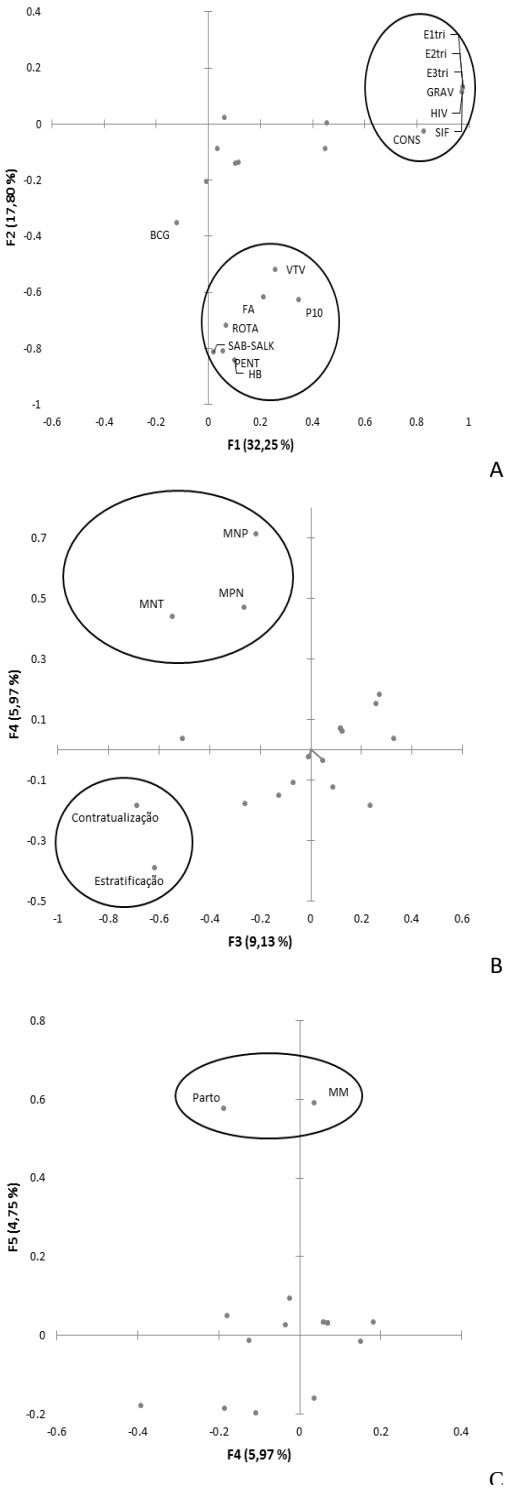

Figura 1. Factorial analysis ordination diagram.

In figure 1A, the abscissa axis corresponds to domain 1, Consultations and Maternal Prevention, with 32.25% of the total variability, contemplating the variables: number of consultations/number of pregnant women, first trimester tests/number of pregnant women, second trimester tests/number of pregnant women, third trimester tests/number of pregnant women, syphilis quick test/number of pregnant women, pregnancy quick test/number of pregnant women, HIV quick test/number of pregnant women. In the ordinates axis is domain 2, Follow-up of the Child, representing 17.79% of the total variability. In this area were covered the variables: Hepatitis B, Pentavalent, Sabin or Salk, BCG, VTV, Yellow Fever, Rotavirus and Pneumococcal Pneumonia 10.

In figure 1B, the abscissas correspond to domain 3, with 9.13% of the total variability. The aggregate variables in this area were: Contractualization and risk stratification of pregnant women, as well as their linking to referral hospitals through contracts of the hospitals with the municipalities. Knowing that these are actions developed by the municipality officials, along with their regional health care centers, chose to name the set of variables as "Management". In the ordinates axis is domain 4, Infant Mortality, representing 5.97% of the total variability. In this domain were added the variables: early neonatal mortality score, late neonatal mortality score and post-neonatal mortality score.

In figure 1C, in the ordinates axis is domain 5, Risk, representing 4.74% of the total variability. In this domain were contemplated the variables: Childbirth and maternal mortality score. Whereas the type of delivery represents a risk factor for the pregnant woman and the child, this indicator in association with maternal mortality, shown in the set of variables in factor 5, represents the composition of the domain "Risk".

For the calculations of the domains, the following equations were used:

Eq. 1) Consultations and Maternal Prevention (variation of the score from zero to 14) = n consultations + tests 1st tri+ tests 2nd tri+ tests 3rdtri+syphilis + pregnancy + HIV / n pregnant
Eq. 2) Follow-up of the child (score 0 to 16) = Hepatitis B + Pentavalent + Sabin or Salk + BCG + VTV + Yellow Fever + Rotavirus + Pneumococcal Pneumonia 10
Eq. 3) Management (score 0 to 4) = Stratification + Contractualization
Eq. 4) Infant Mortality (score 0 to 6) = Late neonatal mortality score + early neonatal mortality score + post-neonatal mortality score
Eq. 5) Risk (score 0 to 4) = Childbirth + maternal mortality score

The calculations for each of the domains resulted in scores that were standardized on a scale of zero (0) to one hundred (100), and subsequently the average of all domains for the definition of the Evaluative Index (EI) were accomplished according to the algorithm of Equation 6:
Eq. 6) Evaluative Index = Consultations and Maternal Prevention + Follow-up + Management + Infant Mortality + Risk / 5

After calculating the EI, the results were ranked and classified according to the NPPM adequacy criteria, meaning values equal to or above 70 points are "appropriate" for evaluation, and values below 70 "inappropriate". This value follows the supposition that at least 2/3 of the preconditions established by the NPPM were followed.

The five domains referring the evaluated factors have validity and reliability for their application in future studies with the same goal. All items demonstrated factorial significance and correlation in accordance with the criteria established in this study. Thus, this study contributes to measurement of the items proposed for the evaluation of the implementation of the NPPM.

On the other hand, as limitation of the process, the validation of the instrument resulted in the exclusion of a considerable number of originally proposed items because the referring data were not available in data bases or because they were incomplete or redundant in the factorial analysis. This fact indicates a lower availability of actions and a smaller completeness of services.

In this study, the KMO value was 0.618. KMO values greater than 0.5 indicate good quality of the data base for factorial analysis[6]. Even though, the internal consistency was too high and the value of Cronbach's alpha coefficient was equal to 0.839. The result of the factorial analysis of 69.89% was considered satisfactory, above the result with a minimum explicability of 60% of the variability[11].

The visual analysis evaluates the relevance of each variable in the factor or domain composition, which contributes to the understanding of the interrelations of the variables and a better understanding of the behavior of the same[11], as shown by the figures 1, 2 and 3. It should be noted that the factorial plans are not related, however, represent the variables in a two-dimensional plan to understand the behavior of the interrelation between them, that is, the closer the variable is to the unit circle, the greater is its representativeness for the respective domain[11].

Domain 1, Consultations and Maternal Prevention, is related to prenatal monitoring of the pregnant women, contemplating the gestational tests, rapid tests for tracking sexually transmitted diseases, as well as the number of accomplished consultations and the number of monitored pregnant women, as established by the NPPM Guideline. It is known that a prenatal care with quality is essential for the timely detection and treatment of diseases, as well as for the control of risk factors that can lead to complications for maternal and infant health[12].

In relation to risk factors for the child, there is domain 2, Follow-up of the Child, which demonstrates the actions related to children's monitoring in the first year of life in relation to immunization, mandatory practice to children according to the vaccination calendar established by the NIP, since vaccination represents a preventive action regarding contagious diseases, contributing to the protection of health and control of diseases which are preventable through immunization, beyond avoiding epidemic outbreaks[13].

In domain 3, Management, the issues concerning the risk stratification of pregnant women and children and the contractualization

of hospitals to carry out monitoring of this population according to the risk. These actions are important tools for the flow within the network, enabling the efficaciousness of the health conditions of pregnant women in the interior of the system, since the regular attendance occurring in primary care during prenatal care and childbirth will be accomplished in the hospital, considered tertiary attendance. Well established and regulated flow of the network enables the timely care[1].

In domain 4,Child Mortality was evaluated. Identifying in which period the infant death occurred is essential for the development of prevention, since if the death occurred in the neonatal period, for example, it can be associated with perinatal conditions, congenital anomalies, not using best practices during the delivery, inadequate prenatal care, in this sense the actions on health must be directed to improving the quality of prenatal care[14,15].

And finally, in domain 5, called Risk, the Maternal Mortality was described. In this domain it was possible to assess the performed type of childbirth as well as the MMR, seeing that the two variables are related, because the quality of delivery influences significantly the number of maternal deaths[16].The risk classification and the humanized assistance to pregnant women in accordance with the obstetric conditions imply a prenatal quality in which care is developed based on the individual needs of every pregnant woman and will result in a suitable childbirth for these demands, minimizing problems to the pregnant woman and the newborn and influencing the mortality indicator[1,17].

On the above, the construction of an instrument that is capable to evaluate these domains which reflect the actions of a public health program is of paramount importance since the evaluation helps in decision making, enables improvement in health interventions and in the reorganization of health practices[18], promoting quality in actions and assistance for thehealth of the population.

FINAL CONSIDERATIONS

Among the challenges faced in the preparation of this study, two issues are worth mentioning. The first was the construction and validation of a tool that has the potential to be used as an indicator of the quality of maternal and infant health in the state Paraná. The second was the elaboration of this instrument with the capacity to be used for assessing the implementation of other public programs of maternal and infant health. It is known that new studies using this instrument can, besides the dimensions shown, aim at others which have not been included, given the reality of the absence of data in the information systems available today. Furthermore it is hoped, with this work, to be able to contribute to the assessment of the implementation of the Network Program Paraná Mother in all regional health centers in the state as well as other programs aimed at evaluating the quality of the actions on maternal and infant health.

CONSTRUÇÃO E VALIDAÇÃO DE INSTRUMENTO AVALIATIVO DE PROGRAMA PÚBLICO DE SAÚDE MATERNO-INFANTIL

RESUMO

Este artigo apresenta a construção e validação de um Instrumento de Avaliação de Programa Público de Saúde Materno-Infantil. Trata-se de uma pesquisa avaliativa, de abordagem quantitativa, realizada por meio dos Sistemas de Informação em Saúde nos 55 municípios da 9ª, 10ª e 17ª Regionais de Saúde do estado do Paraná, nos dois anos que antecederam e sucederam à implantação do Programa Rede Mãe Paranaense. Para o tratamento dos dados utilizou-se a análise fatorial. O instrumento contemplou 22 variáveis que foram distribuídas em cinco domínios, sendo eles: Consultas e Prevenção Materna, Seguimento da Criança, Gestão, Mortalidade Infantil e Risco. Os resultados apresentados confirmaram a validade e a confiabilidade dos dados, com um alfa de Cronbach de 0,839. O instrumento avaliativo do estudo demonstrou-se útil para a avaliação do Programa Rede Mãe Paranaense e tem o potencial de ser utilizado para outros Programas Públicos de Saúde Materno-Infantis.

Palavras-chave: Avaliação de programas e projetos de saúde. Avaliação em saúde. Estudos de validação. Atenção primária à saúde.

CONSTRUCCIÓN Y VALIDACIÓN DEL INSTRUMENTO DE EVALUACIÓN DEL PROGRAMA PÚBLICO DE SALUD MATERNO-INFANTIL

RESUMEN

Este artículo presenta la construcción y validación de un Instrumento de Evaluación de Programa Público de Salud Materno-Infantil. Se trata de una investigación evaluativa, de enfoque cuantitativo, realizada por medio de los Sistemas de Información en Salud en los 55 municipios de la 9ª, 10ª y 17ª Regionales de Salud del estado de Paraná, en los dos años que precedieron y transcurrieron a la implantación del Programa Red Madre Paranaense. Para el tratamiento de los datos se utilizó el análisis factorial. El instrumento contempló 22 variables que fueron distribuidas en cinco dominios, siendo: Consultas y Prevención Materna; Seguimiento del Niño; Gestión; Mortalidad Infantil y Riesgo. Los resultados presentados confirmaron la validez y la confiabilidad de los datos, con un alfa de Cronbach de 0,839. El instrumento evaluativo del estudio se ha demostrado útil para la evaluación del Programa Red Madre Paranaense y tiene el potencial de ser utilizado para otros Programas Públicos de Salud Materno-Infantiles.

Palabras clave: Evaluación de programas y proyectos de salud. Evaluación en salud. Estudios de validación. Atención primaria a la salud.

REFERENCES

1. Mendes EV. As redes de atenção à saúde. Brasília (DF): Organização Pan-Americana da Saúde; 2011.

2. Lavras C. Atenção primária à saúde e a organização de redes regionais de atenção à saúde no Brasil. Saúde Soc. 2011 out/dez; 20(4):867-74.

3. Victora CG, Aquino EML, Leal MC, Monteiro CA, Barros FC, Szwarcwald CL. Saúde de mães e crianças no Brasil: progressos e desafios. Lancet. 2011 maio; 377(9780):1863-76.

4. Secretaria de Estado da Saúde (SESA PR). Linha Guia Rede Mãe Paranaense. Curitiba; 2012.

5. RIPSA. Rede Interagencial de Informações para a Saúde. Fichas de qualificação para o indicador. BVS [online]. 2012. [citado 2015 mar 30]. Disponível em: http://www.ripsa.org.br

6. Hair FJ, Black WC, Babin B, Anderson RE, Tathan RL. Análise multivariada de dados. 6nd ed. Porto Alegre: Bookman; 2009.

7. Guedes HAS, Silva DD, Elesbon AAA, Ribeiro CBM, Matos AT, Soares, JHP. Aplicação da análise estatística multivariada no estudo da qualidade da água do Rio Pomba, MG. Rev Bras Eng Agric Ambient. 2012 maio; 16(5):558-63.

8. Cárdenas SFS, Pons LS. Usos del coeficiente alfa de Cronbach em El análisis de instrumentos escritos. Rev Med Electrón. 2012 Jan/Fev; 34(1):1-6.

9. Lopes J, Kaimen-Maciel DR, Matsuo T. Adaptação Transcultural e Validação da Escala de Impacto de Esclerose Múltipla. Rev Neurocienc. 2011; 19(3):433-40.

10. Carvalho C, Manso AC, Escoval A, Salvado F, Nunes C. Tradução e Validação portuguesa do Geriatic Oral Health assessment Index (GOHAI). Rev Port Saúde Pública. 2013 Nov; 31(2):166-72.

11. Zanella A, Seidel EJ, Lopes LFD. Validação de questionário de satisfação usando análise factorial. INGEPRO 2010 dez; 2(12):102-12.

12. Domingues RMSM, Hartz ZMA, Dias MAB, Leal MC. Avaliação da adequação da assistência pré-natal na rede SUS do município do Rio de Janeiro, Brasil. Cad Saúde Pública. 2012 mar; 28(3):425-37.

13. Souza CJ, Vigo ZL, Palmeira CS. Compreensão dos pais acerca da importância da vacinação infantil. Rev Enferm Contem. 2012 dez; 1(1): 44-58.

14. Lansky, S, Friche AAL, Silva AAM, Bittencourt SDA, Carvalho ML, et. al. Pesquisa Nascer no Brasil: perfil da mortalidade neonatal e avaliação da assistência à gestante e ao recém-nascido. Cad Saúde Pública. 2014 fev; 30 Supl:192-207.

15. Fernandes CA, Vieira VCL, Scochi MJ. Mortalidade infantil e classificação de evitabilidade: Pesquisando municípios da 15 Regional de Saúde do Paraná. Rev Cien cuid saúde. 2013 out/dez; 12(4):752-9.

16. Viana C, Novaes MRCG, Carderon IMP. Mortalidade Materna – uma abordagem atualizada. Comun Cienc Saúde. 2011 out/dez; 22 Suppl 1:141-52.

17. Alves VC. Humanização da Assistência de Enfermagem no pré-natal. Rev Enfer. Profissional. 2014 jul/dez; 1(2):471-88.

18. Chaves LDP, Tanaka OY. O enfermeiro e a avaliação na gestão de Sistemas de Saúde. Rev Esc Enferm USP. 2012 out; 46(5):1274-8.

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