

ANALYSIS OF THE RECORDS OF USERS OF THE 'HIPERDIA' PROGRAM

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ABSTRACT: This documental, descriptive and epidemiological study aimed to evaluate the quality of the record taking in the registration forms of users of the Hypertensives and Diabetics Registration and Monitoring System (known in Portuguese as HIPERDIA) in a municipality in the state of Rio Grande do Sul (RS), Brazil. The data relating to 637 records from 17 micro-areas were compiled, for the period August 2010 – December 2011 and were analyzed using the BIOESTAT[®] program, version 4.0. Among the results, the following stand out: higher prevalence of hypertensives; smoking, sedentarism and overweight/obesity as risk factors; and acute myocardial infarction, cerebrovascular accidents and kidney disease as complications of the diseases. The significant failure to fill out areas which are obligatory and of epidemiological interest may hinder better characterization of the service users and the planning of preventive actions and reorganization of the health services.

DESCRIPTORS: Records; Diabetes Mellitus; Hypertension; Effectiveness.

ANÁLISE DOS REGISTROS DE USUÁRIOS DO PROGRAMA HIPERDIA

RESUMO: Estudo de cunho documental, epidemiológico descritivo, teve por objetivo avaliar a efetividade dos registros das fichas de cadastro de usuários do Sistema de Cadastramento e Acompanhamento de Hipertensos e Diabéticos - HIPERDIA de um município do Rio Grande do Sul-Brasil. Os dados relativos a 637 cadastros de 17 micro áreas foram compilados, no período de agosto de 2010 a dezembro de 2011 e analisados por meio do programa BIOESTAT[®] versão 4.0. Destaca-se entre os resultados maior prevalência de hipertensos; tabagismo, sedentarismo e sobrepeso/obesidade como fatores de risco; infarto agudo do miocárdio, acidente vascular cerebral e doença renal como complicações das doenças. O expressivo não preenchimento de campos obrigatórios e de interesse epidemiológico pode prejudicar melhor caracterização dos usuários e o planejamento de ações de prevenção e reorganização dos serviços de saúde.

DESCRIPTORES: Cadastro; Diabetes Mellitus; Hipertensão; Efetividade.

ANÁLISIS DE LOS REGISTROS DE USUARIOS DEL PROGRAMA HIPERDIA

RESUMEN: Estudio documental, epidemiológico descriptivo, que tuvo por objetivo evaluar la efectividad de los registros de fichas de usuarios del Sistema de Registro y Acompañamiento de Hipertensos y Diabéticos - HIPERDIA de un municipio del Rio Grande do Sul, Brasil. Los datos referentes a 637 registros de 17 micro áreas fueron compilados en el periodo de agosto de 2010 a diciembre de 2011 y analizados por medio del programa BIOESTAT[®] versión 4.0. Se destaca, entre los resultados, mayor prevalencia de hipertensos; tabaquismo, sedentarismo y sobrepeso/obesidad como factores de riesgo; infarto agudo del miocárdio, accidente vascular cerebral y enfermedad renal como complicaciones de las enfermedades. El expresivo no relleno de campos obligatorios y de interés epidemiológico puede perjudicar una buena caracterización de los usuarios y el planeamiento de acciones de prevención y reorganización de los servicios de salud.

DESCRIPTORES: Registro; Diabetes Mellitus; Hipertensión; Efetividad.

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INTRODUCTION

The chronic non-communicable diseases (CNCD), including Systemic Hypertension (SH) and Diabetes Mellitus (DM) have received greater attention in recent years because of the growing number of individuals who present them, worsened by the increase of those already diagnosed who are not able to adequately control the disease. These health issues are responsible for 66% of years of life lost and for relevant clinical complications which entail premature deaths, inability to work and rising public spending⁽¹⁾, including important repercussions on the population's life.

SH and DM, besides being avoidable, share many risk factors. In 2010, in Brazil, DM was responsible for 4.7% of deaths, while SH was responsible for 4.0%, only falling behind cerebrovascular illnesses, coronary artery diseases, influenza, pneumonia and assaults and homicides⁽²⁾.

In this regard, due to the need for an instrument which allows the recording and monitoring of health service users and the generation of information on performance and clinical results, in 2002 the Ministry of Health created the Hypertensives and Diabetics Registration and Monitoring System (HIPERDIA). Its aim is to detect and link persons with these health problems to the health centers, and to identify, at an early stage, complications related to the diseases, providing appropriate treatment and promoting preventive activities and activities for the reorganization of the health services⁽³⁾.

However, this only allows one to visualize general data regarding the service users' health situation, and many Primary Healthcare Centers (UBS) are unable to address the population effectively⁽⁴⁾. As a result, it is necessary to investigate the diseases' epidemiological dynamics in order to know their distribution, the population's exposure to these conditions, and the factors which influence the risks, supporting the process of prevention and monitoring of these diseases in the community.

This article originated based on the development of actions undertaken as part of specialization courses run by the university in conjunction with a municipality in the North of the State of Rio

Grande do Sul (RS), Brazil, when the need arose to investigate the local context of hypertensives and diabetics registered in the HIPERDIA program. For this purpose, it was proposed to undertake a study with the objective of evaluating the effectiveness of the record taking in the registration forms of users of a HIPERDIA program.

METHOD

This is a documental study with a quantitative character, of the descriptive epidemiological type, undertaken in a municipality in the north-west region of the State of Rio Grande do Sul, Brazil, with a territorial area of 364 Km² and a population estimated at 7,878 inhabitants⁽⁵⁾. The municipality has one UBS and one Family Health Strategy (ESF), both located in the urban zone. Its territory was divided in 20 health micro-areas.

The study population was made up of persons registered in the HIPERDIA program of the municipality's UBS and ESF in the period August 2010 – December 2011. Data collection occurred through compilation of the registration forms of the HIPERDIA program archived in the Municipal Health Department, using a form elaborated by the researchers. A total of 637 records of the program were analyzed, corresponding to 17 of the 20 micro-areas in the municipality. Three micro-areas were not included in the study because they did not present Community Health Workers in the data collection period to update the records.

The inclusion criteria was for the service user to have an updated record in the HIPERDIA program. The variables selected for the analysis were categorized in eight groups, according to data from the HIPERDIA program's data form, as shown in Chart 1.

For organizing and analyzing the data, Windows Excel®, version 2010 was used. The data were later transferred to the BIOESTAT® program, version 4.0, analyzing frequency and percentages.

The ethical and legal principles of Resolution 466/2012 were respected, and the project was approved by the Research Ethics Committee of the Integrated Regional University of Alto Uruguai and Missões, under record CAAE 0020.0.284.000-10.

Chart 1 – Variables studied from the data form of the HIPERDIA program. Erval Seco-RS-Brazil, 2011

Group of variables	From the data form of the HIPERDIA program
Header of the form	Health unit's name; Outpatient Information System/Unified Health System code; Number of the patient's hospital records.
Identification of the service user	User's name; of the mother; of the father; Date of birth; Sex; Race/color; Educational level; Nationality; Country of origin; Date of naturalization; Naturalization number; State, and name of municipality of birth; Family/marital situation; Number of Unified Health System card.
General documents	Voter registration card; Zone where registered to vote; Series for voter registration card; Number, Series, Date issued and Federal State on Work and Social Security Card; Social Security Number; Social Integration Program/Public Service Employee Savings Program.
Mandatory documents	Identity; Identity number; Identity Issuing Body; Federal State where issued; Date identity issued; Certificate; Type of Certificate; Name of notary office; Book; Page; Date issued.
Address	Road/avenue; Street name; Number; Neighborhood; Zip code; Telephone.
Patient's Clinical Data	Systolic Arterial Pressure; Diastolic Arterial Pressure; Risk factors or concurrent illnesses; Family/cardiovascular history; Type I Diabetes; Type II Diabetes; Smoking; Sedentarism; Overweight/Obesity; Systemic Hypertension and Stratification of the risk and qualification of the blood pressure prognosis; Body Mass Index; Glycemia; Presence of Complications (Acute myocardial infarction, Other coronariopathies, Cerebro-vascular accident, Diabetic foot, Amputation resulting from diabetes, Kidney disease); Treatment: Drug treatment; Other medications; Use of Insulin.
Records made of attendance	Date of consultation; Signature of person responsible.

RESULTS

Of the 637 records of the program, all the users' identification data presented the user's full name. It was ascertained that in the area allocated to the form header, which encompasses information such as name of the health unit, Outpatient Information System (SIA)/Unified Health System (SUS) and the number of the hospital record, 96 (15%) of these, referring to the unit, were filled out. A smaller number of registration forms presented the registration number of the Unified Health System (SUS) card.

The data regarding date of birth and mother's and father's names, had a mean of 95% of the data provided. In the field 'nationality', 621 (97.4%) of the registration forms were filled out as 'Brazilian'; on the other hand, in the fields referent to country of origin and date of naturalization, 33 (52.4%) and 58 (9%) presented the data. In 63 (100%), the number of the law referent to the naturalization cannot be identified. The name of the municipality of birth was presented in 547 (86%) registration forms; 276 (34%) presented the

State of the municipality of origin. In 137 (21.6%) the registration number of the SUS card was filled out.

Of the service users registered, 420 (66.0%) were female and 217 (34.0%) male. The greatest prevalence of age was between 60 and 69 years old, with 180 (28.2%) service users. Next, one finds the age ranges of 50 to 59 and 70 to 79 years old, 139 (21.8%) and 138 (21.6%), respectively. The mean age was 63.9 years old.

Regarding educational level, 295 (46.3%) of the service users had not finished Junior High School, followed by 112 (17.5%) who were literate, and 100 (15.6%) who were illiterate. Regarding race, 476 (76.2%) were white, 39 (6.1%) were of mixed race and 15 (2.3%) were black. In relation to the family/marital situation, 188 (29.5%) stated that they lived with their partner, to whom they were married, and without children, 131 (20.5%) lived with a partner or children; 73 (11.4%) with family members and without children, and 39 (6.1%) lived alone.

General documents, such as the Social Security number (CPF), had 546 (85.7%) of the fields filled out. The title, zone and series number of the voter

registration card, on the other hand, had data filled out in 361 (56.6%), 352 (55.2%) and 268 (42%) cases, respectively. The other documents had few fields filled out, as can be observed in Table 1.

Fields such as 'street name' and zip code had significant identification in fields filled out, with 594 (93.2%) and 500 (78.4%). However, fields such as 'neighborhood' and 'type of street/avenue etc' had lower frequencies, with 282 (44.2%) and 271 (42.5%), respectively. In 67 (10.5%) and 144 (22.6%) there were the long-distance telephone number area code and the service

Table 1 - General documents filled out in the registration form of the HIPERDIA program. Erval Seco, RS, Brazil, 2011

Variables	n	%
CTPS Number*		
Identified	06	0,9
Series of CTPS*		
Identified	07	1,0
State where CTPS issued*		
Identified	8	1,2
Date CTPS issued*		
Identified	22	3,4
PIS/PASEP Number**		
Identified	04	0,6

* CTPS - Work and Social Security Number card;

** PIS/PASEP – Social Integration Program/Public Service Employee Savings Program.

user's telephone number.

In the field for patient clinical data, the recording of risk factors and illnesses was ascertained, as shown in Table 2.

In relation to the presence of complications, one can ascertain the occurrence of diseases which predominate in Brazilian epidemiology, as described in Table 3.

Based on these data, it is possible to stratify the service user's risks and prognoses for systemic arterial pressure and her health characteristics, in accordance with the degrees of risk and the probability of some cardiovascular event in the next few years, increasing exponentially according to the degrees and, thus, to establish the procedures stipulated by the program. Based on height and weight, one can also evaluate the Body Mass Index (BMI). Thus, 304 (47.7%) of the service users belonged to the normal weight and low

Table 2 - Risk factors and concurrent illnesses recorded in the registration form of the HIPERDIA program. Erval Seco, RS, Brazil, 2011

Variables	n	%
Diabetes Mellitus Type I		
Yes	105	16,4
No	479	75,2
Not identified	53	8,4
Diabetes Mellitus Type II		
Yes	94	14,7
No	490	76,9
Not identified	53	8,4
Smoking		
Yes	195	30,6
No	389	61,0
Not identified	53	8,4
Sedentarism		
Yes	256	40,1
No	328	51,5
Not identified	53	8,4
Overweight/Obesity		
Yes	272	42,7
No	312	48,9
Not identified	53	8,4
Systemic Hypertension		
Yes	539	84,6
No	45	7,0
Not identified	53	8,4

risk group for the development of comorbidities, and 97 (15.2%) belonged to the group which was overweight and at slightly increased risk. In the obese group, 122 (19.1%) were classified as Obese class I, with a moderate risk for the development of comorbidities, 52 (8.1%) as Obese class II, and 10 (1.5%) as Obese class III, at serious and very serious risk of developing comorbidities. It may be observed that 154 (24.1%) of the service users presented a waist measurement of between 90 cm and 99 cm, followed by 135 (21.1%) with measurements of 100 cm and 109 cm and 96 (15.7%) with 110 cm and 119 cm.

All the registered users made use of medications from the HIPERDIA program's basic table. Among these medications mentioned were: Hydrochlorothiazide (25mg), Propranolol (40mg), Captopril (25mg), Glibenclamide (5mg) and

Table 3 - Record of complications in the registration form of the HIPERDIA Program. Erval Seco, RS, Brazil, 2011

Variables	n	%
Acute Myocardial Infarction		
Yes	105	16,4
No	479	75,2
Not identified	53	8,4
Other coronariopathies		
Yes	94	14,7
No	490	76,9
Not identified	53	8,4
Cerebro-Vascular Accident		
Yes	195	30,6
No	389	61,0
Not identified	53	8,4
Diabetic foot		
Yes	256	40,1
No	328	51,5
Not identified	53	8,4
Amputation resulting from Diabetes Mellitus		
Yes	272	42,7
No	312	48,9
Not identified	53	8,4
Kidney Disease		
Yes	539	84,6
No	45	7,0
Not identified	53	8,4

Metformin (850mg). Glycemia was mentioned in only 60 (9%) of the records made, with 48 (7.2%) being fasting capillary blood glucose, and 12 (1.8%) post-prandial. Only 11 (2%) of the service users mentioned using insulin regularly.

In 543 (85.2%) forms, the date of the consultation was filled out. The field referent to the signature of the person responsible for the attendance was filled out in only 392 (61.5%) of the forms. These fields are mandatory and identify those responsible for the registration made.

In summary, the records evidenced a greater prevalence of women (66.0%); of the age range 60 – 69 years old (28.2%); of Caucasians (76.2%); and who did not finish junior high school (46.3%). In relation to the clinical data, the prevalence was ascertained of patients with Type I Diabetes Mellitus (16.4%); Type II Diabetes Mellitus (14.7%) and High Blood Pressure (84.6%). Regarding the occurrence of the risk factors, such as smoking

(prevalence of 30.6%), sedentarism (40.1%) and overweight/obesity (42.7%), the presence of complications such as acute myocardial infarction, cerebrovascular accidents, kidney disease and the use of medications available through the program were observed.

DISCUSSION

The prevention of, and care for, SH and DM must occur as a matter of priority in Primary Care⁽⁶⁾, although when the service user's general data are not available in the registration forms, it is concluded that there are problems in the system's gateway, which must develop the way in which it organizes all the health actions and has the flow facilitated between the levels of care.

In this study, the majority of the service users registered was female. In a study undertaken in Pelotas (RS), a similar prevalence was found, with 69.9% of the service users with SH, and a slight male prevalence of 53.3% for DM⁽⁴⁾. This may be attributed to the historical existence of actions directed specifically at women's health. This being the case, the professionals must encourage male individuals to seek the health services, particularly regarding the chronic-degenerative diseases⁽⁷⁾.

In relation to the service users' age, similar data were found in another study, in which the mean age was 63.5 years old⁽⁸⁾. This explains the predominance of these diseases in elderly persons^(4,8-9), confirming the need to intensify health promotion actions in the younger age ranges, with healthier living habits and the control of health conditions impacting positively in old age. Furthermore, the prevalence of SH and DM increases with individuals' age, to which one can add the considerable growth of the elderly population in Brazil⁽⁹⁾. In this way, health managers and professionals must concern themselves immediately with this part of the population, developing control actions and educational actions for the co-responsibilization for their health.

The predominance of low rates of literacy among the registered users is a worrying factor, as these are service users with chronic illnesses who often need to maintain a specific level of care in relation to medications and food restrictions⁽⁴⁾. As a result, the health teams have the responsibility to develop active actions, such as health groups

and home visits, for example, as well as facilitating communities' access to health actions and to the necessary medications.

The predominance of Caucasians in the population studied can be explained based on the colonization of the region in question by Germans, Poles and Italians. Although the impact of miscegenation on SH in Brazil is not known precisely, it is twice as prevalent in non-whites⁽¹⁰⁾.

A significant number of forms stated that the service users lived with a partner, to whom they were married, and without children. However, in a study undertaken in Maringá in the State of Paraná-Brazil, the majority of patients lived with a spouse and/or children⁽⁷⁾. In analyzing the predominant age range with the family/marital situation, the hypothesis is suggested that the service users are elderly persons who need strategies of monitoring in the home, above all, for care from the ESF.

A wide variety of frequencies was observed in the recording of general and mandatory documents. This leads to a fairly peculiar aspect, as the information from the general documents is not mandatory for the final processing of the records, which occurs in the opposite manner in the mandatory documents, as, for example, with the identity number⁽¹¹⁾. In relation to the service user's address, a good percentage of filling-out was observed, a situation similar to that of a study undertaken in Pelotas, RS, in which there was a high rate of filling-out of the name (99.5%) and number (98.4%) of the street and neighborhood (97.9%)⁽¹²⁾.

One fundamental field of the registration form of the HIPERDIA program has to do with the patient's clinical data, with specific information for the health professionals' actions, as it is possible to categorize them and investigate their clinical needs. This form of categorizing the service user according to the risk facilitates decision-making regarding both control and practices of prevention of health problems, in particular because it is possible to visualize the predisposition to health risks. On the other hand, this classification requires skilled professionals, that is to say, who are familiar with the form, the program's objectives, and the purpose of each field to be filled out.

There were gaps in the filling out of information on diastolic and systolic arterial pressure. This fact

is concerning, given that the measurement of these is the first step for registering the service user on the program. One hypothesis for this occurrence is that the service users only state that they are hypertensive or diabetic, without the data being checked, which is not adequate.

The records of information on risk factors and concurrent illnesses and the presence of complications contributes significantly to qualifying the professionals' analysis regarding the service users' health situation. These data are important, in spite of not being mandatory, as they facilitate the information's inclusion in the national and international standards of consensus, as well as the future monitoring of the service user⁽¹¹⁾. Through the use of data, the professionals can stratify the service users, establishing the treatment considered most suitable to each case, as the HIPERDIA guides the professionals' actions based on the classification of the service users in degrees and by their risk of developing some cardiovascular event in the coming years.

In this context, the findings reveal a significant frequency of service users classified as overweight and obese. Thus, the results confirmed the clear scale of the effect of BMI on DM, SH and dyslipidemia⁽¹³⁾. Equally, the measurement of abdominal circumference, even though not a mandatory field, favors the individual's classification by the prior characteristics of risk for developing associated conditions⁽¹¹⁾.

All the registered service users made use of medications from the HIPERDIA program's basic table. It is important to emphasize that, in many cases, the use of these was associated with the use of other medications. However, the use of insulin as a regular medication was reported by few. Nevertheless, it is not enough for the medications to exist in the health services; their conscientious use is also necessary, so that the actions do not move towards the indiscriminate use of hypotensive substances⁽¹⁴⁾. It is recommended that the health professionals should undertake educational actions, with the encouragement to change habits, and co-monitoring of health with users who are participative in their clinical condition.

FINAL CONSIDERATIONS

Regarding the effectiveness of the records

made in the registrations, the low rate of filling-out of certain fields was identified; through this, it may be observed that the program needs to adjust the model of the service users' registration forms. Fields belonging to the actions of identifying service users, and general and mandatory documents, need to be re-evaluated according to the relevancy for putting the program's actions into effect.

This study's results emphasize the importance of the correct filling-out of the program's forms, which need to be clear and precise; and emphasize the importance of keeping the information systems constantly updated, producing data which are adequate for health professionals and managers to be able to manage the decisions in the way which is most correct and consistent with the dynamics of local health.

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