

ACCESSIBILITY AND USE OF HEALTH SERVICES BY HIV INFECTED PREGNANT WOMEN: INTEGRATIVE REVIEW

ACESSIBILIDADE E UTILIZAÇÃO DOS SERVIÇOS DE SAÚDE POR GESTANTES COM HIV: REVISÃO INTEGRATIVA

ACCESIBILIDAD Y UTILIZACIÓN DE LOS SERVICIOS DE SALUD POR GESTANTES CON VIH: REVISIÓN INTEGRADORA

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Objective: to evaluate the accessibility and use of health services by pregnant women living with human immunodeficiency virus (HIV). **Method:** integrative review carried out in the LILACS, PubMed and SCOPUS databases in January 2016, totaling 39 articles. The classification of the level of evidence was used for critical evaluation of primary studies. **Results:** accessibility has been hindered by aspects such as time, hours of operation, insufficiency of inputs, transportation, location, costs, structure of services, stigma, lack of support, access to knowledge, privacy, confidentiality and professional-user relationship. Regarding the use of health services, this was limited to anti-HIV tests and presented incomplete prophylaxis. The type of use of services included tests, antiretroviral treatment, prenatal care, and childbirth. **Conclusion:** the accessibility and the use of services by HIV-infected pregnant women faces barriers related to time, location and psychosocial aspects.

Descriptors: Access to health care services. Pregnant women. HIV. Aids.

Objetivo: avaliar a acessibilidade e a utilização dos serviços de saúde pelas gestantes que vivem com o vírus da imunodeficiência humana (HIV). Método: revisão integrativa realizada nas bases de dados LILACS, PubMed e SCOPUS no período de janeiro de 2016, totalizando 39 produções. Para avaliação crítica dos estudos primários utilizou-se a classificação do nível de evidência. Resultados: a acessibilidade tem esbarrado nos aspectos: tempo, horário de funcionamento, insuficiência de insumos, transporte, localização, custos, estrutura dos serviços, estigma, ausência de apoio, acesso a conhecimentos, privacidade, confidencialidade e relação profissional-usuária. Quanto à utilização dos serviços de saúde, o mesmo foi limitado ao exame anti-HIV e apresentou profilaxia incompleta. O tipo de uso dos serviços incluiu exames, uso de antirretrovirais, pré-natal e parto. Conclusão: a acessibilidade e a utilização dos serviços pelas gestantes com HIV encontram barreiras relacionadas ao tempo, a localização e aos aspectos psicossociais.

Descritores: Acesso aos Serviços de Saúde. Gestantes. HIV. Aids.

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Objetivo: evaluar la accesibilidad y la utilización de los servicios de salud por las gestantes que viven con el virus de la inmunodeficiencia humana (VIH). Método: revisión integradora realizada en las bases de datos LILACS, PubMed y SCOPUS en el período de enero de 2016, totalizando 39 producciones. Para evaluación crítica de los estudios primarios se utilizó la clasificación del nivel de evidencia. Resultados: la accesibilidad ha impedido en aspectos tales como tiempo, horario de funcionamiento, insuficiencia de insumos, transporte, localización, costos, estructura de los servicios, estigma, ausencia de apoyo, acceso a la conocimientos, privacidad, confidencialidad y relación profesional-usuaria. En la utilización de los servicios de salud, el mismo fue limitado al examen anti-VIH y presentó profilaxis incompleta. El tipo de uso de los servicios incluyó exámenes, uso de antirretrovirales, prenatal y parto. Conclusión: la accesibilidad y la utilización de los servicios por las gestantes con VIH encuentran barreras relacionadas al tiempo, la localización y a los aspectos psicosociales.

Descriptores: Acceso a los Servicios de Salud. Gestantes. VIH. Sida.

Introduction

In Brazil, the most prevalent form of HIV infection in childhood is vertical transmission. This form of transmission caused 159 cases of infection by the Acquired Immune Deficiency Syndrome (AIDS) among under-five children in 2014 alone. However, these cases can be related both to maternal/newborn conditions and to actions aimed at the promotion, prevention and recovery of health⁽¹⁻²⁾.

The access to inputs such as rapid tests, follow-up examinations, antiretroviral drugs and technical materials is expected to be intensified through the organization of the Health Care Networks (HCN). These networks consist in organizational arrangements to systematically integrate health services of different technological densities in order to expand the promotion and preventive actions and the provision of integral attention based on Primary Health Care (PHC) as the main nucleus⁽³⁾.

The HCN is fundamental for decision-making and follow-up of prophylactic and therapeutic actions⁽³⁻⁴⁾. Considering their proposal of integration between the social, governmental and non-governmental actors, they may represent a mechanism to approach the feminization of the epidemic⁽⁴⁻⁵⁾. Investment and integration of strategies for prenatal care, counseling, provision of antiretroviral therapy for women and children exposed to infection, and follow-up of clinical outcomes of cases of child exposure are critical to reduce vertical HIV transmission^(3,6).

However, the journey that users need to go through in the HCN needs to be taken into consideration to estimate the universal access to these conducts. The attention given at the first contact of users with the health services has effects on the accessibility (structural element) and use (procedural element) to address each problem or episodes of a same problem⁽⁷⁾.

Thus, the understanding of these elements goes beyond the ease or difficulty to enter in the health services. Accessibility involves aspects such as proximity between the health services and the assisted population, availability of dates and hours for consultations, and flexibility to schedule appointments. It reflects on the dynamics of offer of actions and on the use of services by users. This will define, among other situations, the possibility of return to give continuity to the follow up⁽⁷⁻⁹⁾.

Furthermore, although specialized services represent the reference for the training of professionals on the care of HIV infected pregnant women, the PHC should be considered the gateway to the health system⁽¹⁰⁾. However, the difficult articulation between HCN points needs to be overcome in order to provide care for this population and increase the access to services. The obstacles include the disproportion between PHC services and the number of inhabitants, the insufficiency of HCN in services of different technological densities and professional unpreparedness to meet the

demands related to HIV, culminating in the fragmentation of actions⁽¹¹⁾.

Considering that the investment in access to services by this population is important for resolute actions during pregnancy, this study aimed to evaluate the accessibility and use of health services by pregnant women living with HIV.

Method

This study consists of an integrative review⁽¹²⁾ based on the guiding question: "What are the scientific evidences of barriers to accessibility and use of health services by pregnant women living with HIV?"

The search was made in January 2016 in the Latin American and Caribbean Literature in Health Sciences (LILACS), *National Library of Medicine/ National Institutes of Health* (PubMed) and *SciVerse Scopus* (SCOPUS) databases. The search in each base employed different strategies, as described in Figure 1. Regarding the time period considered during the selection of articles, there was no temporal cut-off. The different search strategies and the non-use of temporal cut-off allowed increasing the possibility of finding evidence to answer the research question.

The selection of papers was carried out by two persons independently, considering the possibility of bias in this stage. The inclusion criteria were: research articles that answered the guiding question and published in English, Portuguese or Spanish. A total of 668 papers were found, of which 39 made up the *corpus* of the present study (Figure 1).

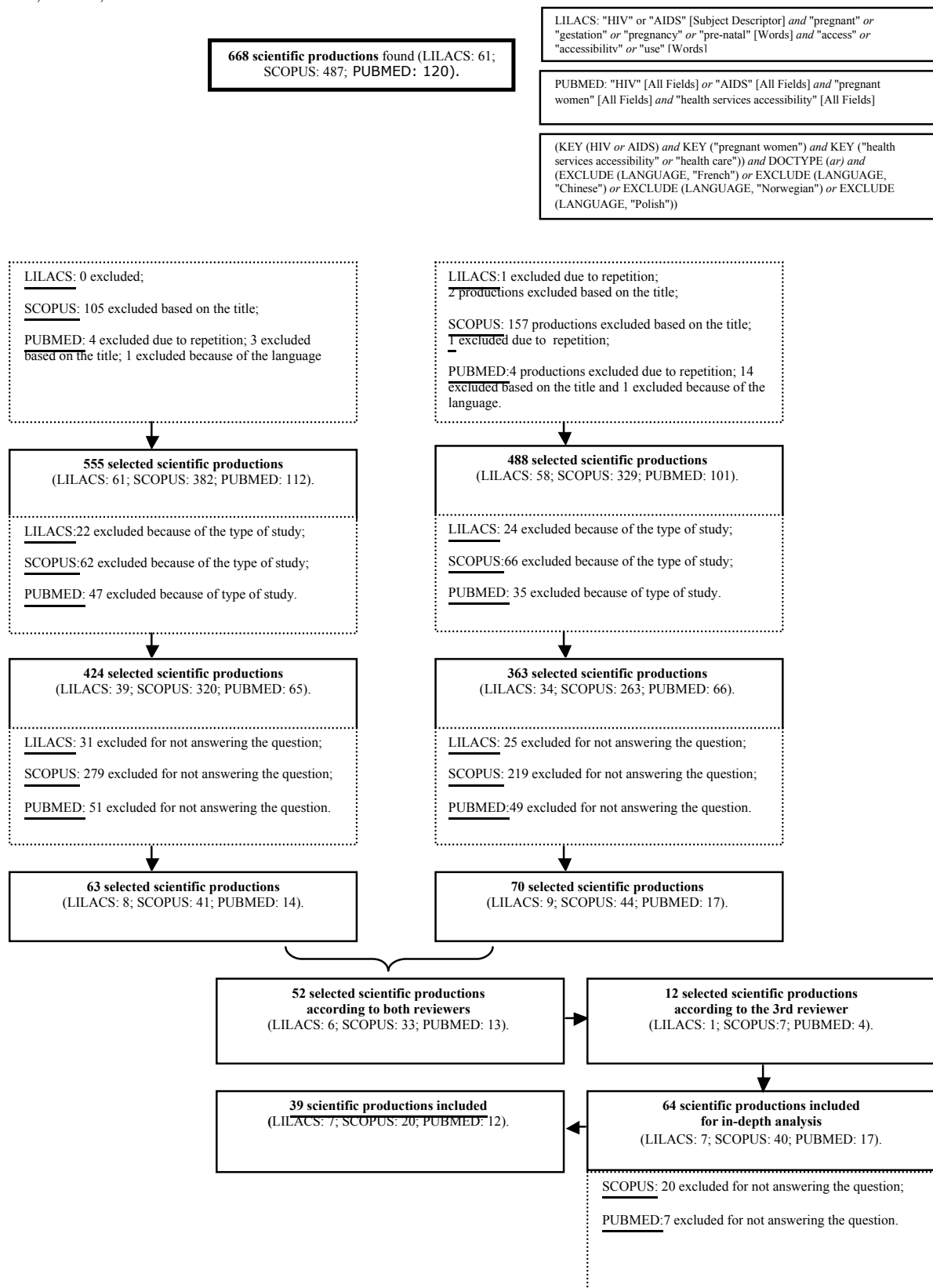
It should be noted that repeated papers were considered only once. The critical evaluation of primary studies was carried out considering the complexity of combining different methodological approaches. Therefore, the system of classification of level of evidence of the selected articles as results in the present integrative review was used⁽¹³⁾.

After the analysis of the productions included, a extraction file was completed, consisting of the following items: identification of the article, place where the study was developed, area of knowledge, objective and design of the study, level of evidence and main results. The ethical aspects were respected through the reliable citation of the ideas, concepts and definitions expressed by the authors of the articles used as results in the present study.

Results

The characterization of the included articles (N = 39) revealed that the majority (31) consisted of quantitative researches. The critical evaluation of the findings showed that most of the primary studies had their clinical question focused on prognosis/etiology (22), with evidence level four (21). Studies carried out in the United States (USA) were predominant (14). The areas of expertise that stood out were Medicine (19) and interdisciplinary (17). As for the temporal distribution, the five-year arrangement pointed to a growing publication of studies related to the theme between 2011 and 2015 (22) (Table 1).

Figure 1 - Flowchart of selection of papers in LILACS/PubMed/SCOPUS. Santa Maria, Rio Grande do Sul, Brazil, 2015



Source: Created by the authors.

Table 1 – Characterization of the analyzed articles, LILACS/PubMed/SCOPUS. Santa Maria, Rio Grande do Sul, Brazil, 2015

| Variables | n | % |
|---|----------|----------|
| Approach | | |
| Quantitative | 31 | 79.5 |
| Qualitative | 5 | 12.8 |
| Quali-quantitative | 3 | 7.7 |
| Research question of the primary study | | |
| Prognosis/etiology | 22 | 56.4 |
| Treatment/intervention | 11 | 28.2 |
| Meaning | 6 | 15.4 |
| Evidence level | | |
| Four | 21 | 53.9 |
| Two | 13 | 33.3 |
| Three | 3 | 7.7 |
| Six | 2 | 5.1 |
| Origin | | |
| USA | 14 | 36.1 |
| Africa | 12 | 30.8 |
| Brazil | 6 | 15.4 |
| Europe | 3 | 7.7 |
| The Netherlands | 1 | 2.5 |
| Canada | 1 | 2.5 |
| Curaçao | 1 | 2.5 |
| India | 1 | 2.5 |
| Knowledge area | | |
| Medicine | 19 | 48.8 |
| Interdisciplinary | 17 | 43.7 |
| Nursing | 1 | 2.5 |
| Psychology | 1 | 2.5 |
| Public Health | 1 | 2.5 |
| Temporal distribution | | |
| 2001 - 2005 | 5 | 12.8 |
| 2006-2010 | 12 | 30.8 |
| 2011-2015 | 22 | 56.4 |

Source: Created by the authors.

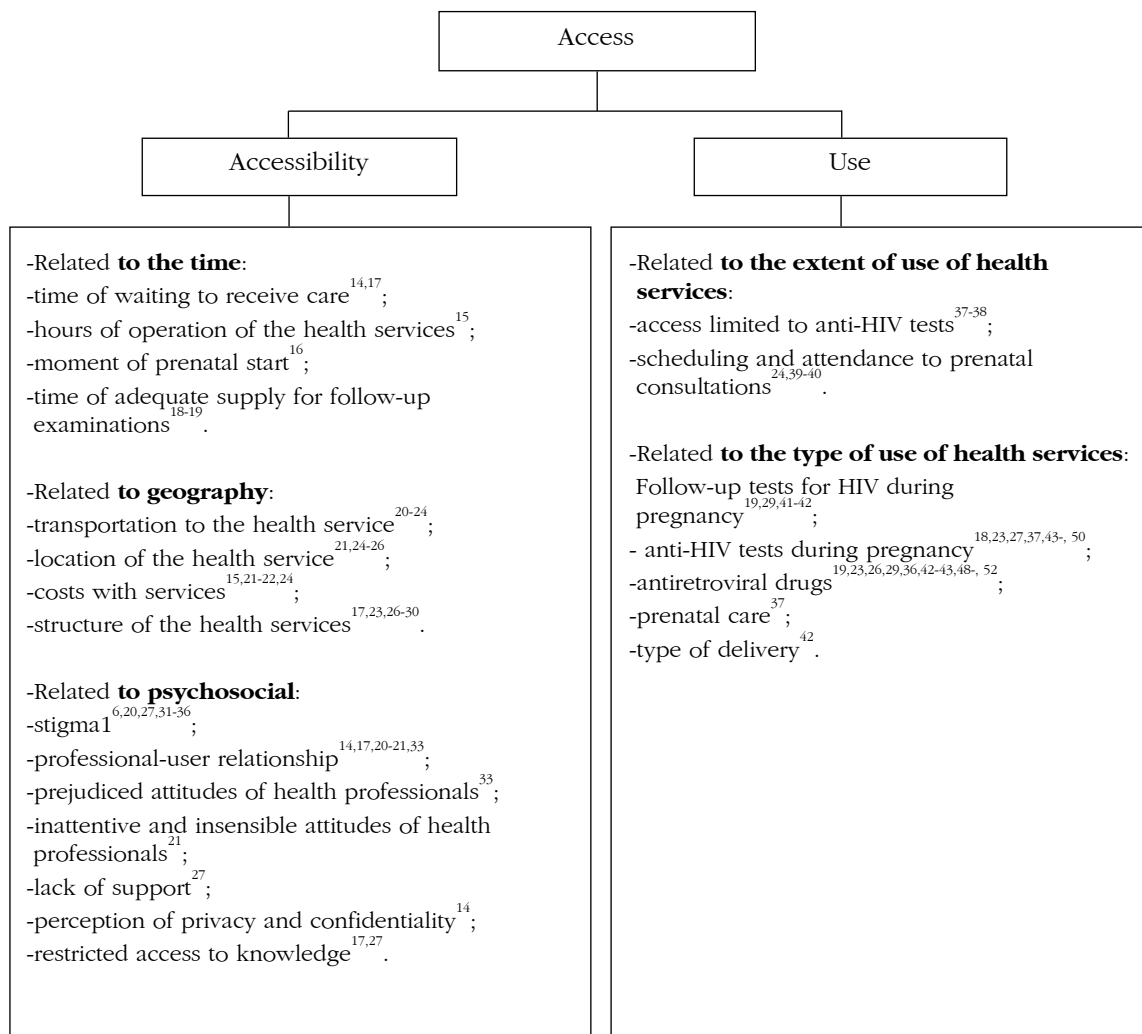
The descriptive analysis of the main results obtained considered the similarity between them. In this way, it was possible to establish categories to answer the question of the present study, namely: Accessibility - related to time, related to geography and related to psychosocial; and Use - related to the extent of use of the services and related to the type of use of the services (Figure 2).

Discussion

The scientific evidence of Accessibility points out that the opportunity for diagnosis

and treatment of cases of HIV infection has been hindered by structural aspects such as time⁽¹⁴⁾, hours of operation of the services⁽¹⁵⁾ and insufficient inputs for management of the maternal infection and prevention of vertical HIV transmission⁽¹⁶⁾. For this population, the waiting time for receiving care is significantly associated with overall satisfaction with the health service⁽¹⁷⁾. This shows that, in spite of access to the service, the gaps in the availability of health actions focused on HIV infection happen due to the late onset of prenatal care⁽¹⁶⁾ and inadequate provision of follow-up HIV testing⁽¹⁸⁻¹⁹⁾.

Figure 2 – Evidence of access of pregnant women living with HIV to health services. LILACS/PubMed/SCOPUS. Santa Maria, Rio Grande do Sul, Brazil, 2015



Source: Created by the authors.

Barriers that make access to HIV prevention services less accessible are also related to geographical aspects such as transportation⁽²⁰⁻²⁴⁾, localization of facilities^(21, 24-26), costs^(15,21-22,24) and the structure of health services^(17,23,26-30), with frequent turnover of professionals and the limited stock of essential materials⁽²³⁾. Such difficulties are even higher for HIV infected women residing in locations far from health services^(21,25) and with limited resources⁽²⁷⁾. This leads to unawareness of the HIV serological *status*⁽²⁵⁾, increased costs to receive health actions⁽²¹⁻²²⁾ and low acceptability of care⁽²¹⁾. In this sense, the integration between the services aimed at prevention of vertical transmission and the management of maternal

HIV infection and prenatal care could result in increased the users' satisfaction, and consequent increased use of these services^(17,23).

As for the psychosocial aspects that may influence the accessibility, stigma^(16,20,27,31-36) is an obstacle during intrapartum procedures⁽³³⁻³⁵⁾, anti-HIV testing, adherence to antiretroviral therapy⁽³¹⁾ and other interventions recommended for the prevention of vertical HIV transmission^(27,32). Additionally, the lack of support⁽²⁷⁾ and restricted access to knowledge^(17,27) were also identified as hindering factors to preventive strategies against vertical HIV transmission⁽²⁷⁾, especially the use of antiretrovirals⁽³⁶⁾, testing and counseling⁽¹⁴⁾. The perception of privacy and confidentiality⁽¹⁴⁾, as

well as the professional-user relationship^(14,17,20-21,33), when permeated by prejudice⁽³³⁾, inattention and insensitivity⁽²¹⁾, contribute to the decline of the quality of care. However, when the relationship between the pregnant woman and the team is positive, overall satisfaction with the service can be achieved⁽¹⁷⁾.

With regard to the Use of services, the scientific evidence points to flaws related to the extension of use of health services. Access was limited to anti-HIV tests⁽³⁷⁾ and prophylaxis was incomplete, especially among those women who became pregnant without knowledge of their serological *status*⁽³⁸⁾. The scheduling and attendance to prenatal consultations^(24,39-40) in Brazil, although free of charge, present barriers for HIV infected pregnant women to access specialized care⁽³⁹⁾.

The type of health services use include follow-up tests for HIV during pregnancy^(19,29,41-42) and anti-HIV tests^(18,23,27,37,43-50), antiretroviral therapy^(19,23,26,29,36,42-43,48-52), prenatal care⁽³⁷⁾ and type of delivery⁽⁴²⁾. Evidence indicates that the occurrence of vertical HIV transmission depends on maternal diagnosis⁽⁴³⁾ before or during pregnancy^(36,41), quantification of HIV viral load and CD4 T-lymphocyte counts⁽⁴¹⁾. In order to be able to focus on these factors, the challenge is to expand the screening and introduce the HIV rapid test in the delivery room⁽⁴⁴⁾ so as to increase the percentage of women receiving interventions to prevent vertical HIV transmission⁽⁴⁷⁾. Such investments are important, considering the high number of women who are not aware of their serological *status*⁽⁴⁵⁾ and women who do not receive measures to prevent vertical HIV transmission⁽⁴⁶⁾.

The improvement of the therapeutic approach to the diagnosis of HIV infection may help to increase the use of antiretrovirals, which is also associated with the reduction of vertical transmission⁽⁴³⁾. In Brazil, the difficulty in obtaining treatment during pregnancy and childbirth has contributed to the increase in vertical transmission⁽⁵¹⁾. Although it is recognized

that compliance with prenatal consultations can guarantee the provision of interventions for the prevention of vertical transmission⁽⁵⁰⁾, late admission can be considered an important factor that prevents the implementation of preventive strategies, such as the diagnosis and treatment of pregnant women⁽¹⁸⁾.

Conclusion

The results found in this study allow us to conclude that the accessibility and use of services to each problem or episodes of the same problem by pregnant women living with HIV faces barriers related to time, location and psychosocial aspects.

Deficits related to the team, facilities and supplies to prevent HIV vertical transmission and the management of maternal infection translate into dissatisfaction of users with the service. Besides having an impact on the use of services, and regardless of whether the health service considers itself a care provider, the access in the first contact will be guaranteed if the users consider the service as such. Investment and qualification of care for HIV infected pregnant women will attract them to the service, making it possible to improve access, regardless of the presence of HIV.

Collaborations

1. conception, design, analysis and interpretation of data: Raquel Einloft Kleinubing, Cristiane Cardoso de Paula, Tamiris Ferreira and Fernanda Severo da Silva;

2. writing of the article, relevant critical review of intellectual content: Raquel Einloft Kleinubing, Cristiane Cardoso de Paula, Stela Maris de Mello Padoin and Tamiris Ferreira;

3. final approval of the version to be published: Raquel Einloft Kleinubing, Cristiane Cardoso de Paula, Stela Maris de Mello Padoin, Tamiris Ferreira and Fernanda Severo da Silva.

References

1. Brasil. Ministério da Saúde. Programa Nacional DST/AIDS. Boletim Epidemiológico AIDS/DST. Brasília; 2014.
2. Carvalhal LM, Anjos DS, Rozendo CA, Costa LMC. Agenda de compromissos para a saúde integral e redução da mortalidade infantil em um município de Alagoas. *Rev Bras Promoc Saúde*. 2013;26(4):530-8.
3. Lavras C. Atenção Primária à Saúde e a Organização de Redes Regionais de Atenção à Saúde no Brasil. *Saúde Soc*. 2011;20(4):867-74.
4. Oliveira RN, Takahashi RF. As práticas de saúde para redução da transmissão vertical do HIV em unidades de atenção básica: realidades e determinantes. *Rev Saúde Coletiva*. 2011;8(54):234-8.
5. Silva GA, Reis VN. Construindo caminhos de conhecimentos em HIV/Aids: mulheres em cena. *Physis*. 2012;22(4):1439-58.
6. Macedo MR, Frauches DO, Macedo LR, Macedo CR. Crianças expostas à transmissão vertical do HIV: seguimento incompleto e sua possível implicação no desfecho. *Rev Bras Pesq Saúde*. 2013;15(2):73-80.
7. Starfield B. Atenção primária: equilíbrio entre necessidades de saúde, serviços e tecnologia. Brasília: Unesco; Ministério da Saúde; 2002.
8. Palácio MB, Figueiredo MAC, Souza LB. O cuidado em HIV/AIDS e a Atenção Primária em saúde: possibilidades de integração da assistência. *PSICO*. 2012;43(3):350-67.
9. Quinderé PHD, Jorge MSB, Nogueira MSL, Costa LFA, Vasconcelos MGF. Acessibilidade e resolubilidade da assistência em saúde mental: a experiência do apoio matricial. *Ciênc Saúde Coletiva*. 2013;18(7):2157-66.
10. Almeida PF, Fausto MCR, Giovanella L. Fortalecimento da atenção primária à saúde: estratégia para potencializar a coordenação dos cuidados. *Rev Panam Salud Publica*. 2011;29(2):84-95.
11. Val LF, Nichiata LYI. A integralidade e a vulnerabilidade programática às DST/HIV/AIDS na Atenção Básica. *Rev Esc Enferm USP*. 2014; 48(spe):149-55.
12. Mendes KDS, Silveira RCCP, Galvão CM. Revisão integrativa: método de pesquisa para a incorporação de evidências na saúde e na enfermagem. *Texto Contexto Enferm*. 2008; 17(4):758-64.
13. Fineout-Overholt E, Stillwell SB. Asking compelling, clinical questions. In: Melnyk BM, Fineout-Overholt, editors. *Evidence-based practice in nursing & healthcare. A guide to best practice*. Philadelphia: Wolters Kluwer, Lippincott Williams & Wilkins; 2011. p. 25-39.
14. Kwapong GD, Boateng D, Agyei-Baffour P, Addy EA. Health service barriers to HIV testing and counseling among pregnant women attending Antenatal Clinic: a cross-sectional study. *BMC Health Serv Res*. 2014;19(14):267.
15. Ferguson L, Lewis J, Grant AD, Watson-Jones D, Vusha S, Ong'Ech JO, et al. Patient attrition between diagnosis with HIV in pregnancy-related services and long-term HIV care and treatment services in Kenya: A retrospective study. *J Acquir Immune Defic Syndr*. 2012;60(3):90-7.
16. Sprague C, Chersich MF, Black V. Health system weaknesses constrain access to PMTCT and maternal HIV services in South Africa: a qualitative enquiry. *AIDS Res Ther*. 2011;8(10):1-9.
17. Vo BN, Cohen CR, Smith RM, Bukusi EA, Onono MA, Schwartz K, et al. Patient satisfaction with integrated HIV and antenatal care services in rural Kenya. *AIDS Care*. 2012;24(11):1442-7.
18. Kissin DM, Akatova N, Rakhmanova AG, Vinogradova EN, Voronin EE, Jamieson DJ, et al. Rapid HIV testing and prevention of perinatal HIV transmission in high-risk maternity hospitals in St. Petersburg, Russia. *Am J Obstet Gynecol*. 2008;198(2):1-183.
19. Dryden-Peterson S, Bennett K, Hughes MD, Veres A, John O, Pradhananga R, et al. An augmented SMS intervention to improve access to antenatal CD4 testing and ART initiation in HIV-infected pregnant women: a cluster randomized trial. *PLoS One*. 2015;10(2):e0117181.
20. Iroezi ND, Mindry D, Kawale P, Chikowi G, Jansen PA, Hoffman RM. A qualitative analysis of the barriers and facilitators to receiving care in a prevention of mother-to-child program in Nkhoma, Malawi. *Afr J Reprod Health*. 2013;17(4):118-29.
21. Silal SP, Penn-Kekana L, Harris B, Birch S, McIntyre D. Exploring inequalities in access to and use of maternal health services in South Africa. *BMC Health Serv Res*. 2012;21(12):120.
22. Chivonivoni C, Ehlers VJ, Roos JH. Mothers' attitudes towards using services preventing mother-to-child

- HIV/AIDS transmission in Zimbabwe: an interview survey. *Int J Nurs Stud.* 2008;45(11):1618-24.
23. Turan JM, Steinfeld RL, Onono M, Bukusi EA, Woods M, Shade SB, et al. The study of HIV and antenatal care integration in pregnancy in Kenya: design, methods, and baseline results of a cluster-randomized controlled trial. *PLoS One* 2012; 7(9):1-12.
 24. Fagbamigbe AF, Idemudia ES. Barriers to antenatal care use in Nigeria: evidences from non-users and implications for maternal health programming. *BMC Pregnancy Childbirth.* 2015; 15:95.
 25. Ononge S, Karamagi C, Nakabiito C, Wandabwa J, Mirembe F, Rukundo GZ, et al. Predictors of unknown HIV serostatus at the time of labor and delivery in Kampala, Uganda. *Int J Gynaecol Obstet.* 2014;124(3):235-9.
 26. Gourlay A, Wringe A, Todd J, Cawley C, Michael D, Mchemba R, et al. Factors associated with uptake of services to prevent mother-to-child transmission of HIV in a community cohort in rural Tanzania. *Sex Transm Infect.* 2015;91(7):520-27.
 27. Peltzer K, Mosala T, Shisana O, Nqueko A, Mngqundaniso N. Barriers to prevention of HIV transmission from mother to child (PMTCT) in a resource poor setting in the Eastern Cape, South Africa. *Afr J Reprod Health.* 2007;11(1):57-66.
 28. Washington S, Owuor K, Turan JM, Steinfeld RL, Onono M, Shade SB, et al. Implementation and operational research: effect of integration of HIV care and treatment into antenatal care clinics on mother-to-child HIV transmission and maternal outcomes in nyanza, kenya: results from the shaip cluster randomized controlled trial. *J Acquir Immune Defic Syndr.* 2015;69(5):e164-71.
 29. Herlihy JM, Hamomba L, Bonawitz R, Goggin CE, Sambambi K, Mwale J, et al. Integration of PMTCT and antenatal services improves combination antiretroviral therapy uptake for HIV-positive pregnant women in Southern Zambia: A prototype for option B+?. *J Acquir Immune Defic Syndr.* 2015;70(4):e123-29.
 30. Turan JM, Onono M, Steinfeld RL, Shade SB, Owuor K, Washington S, et al. Effects of antenatal care and HIV treatment integration on elements of the PMTCT cascade: results from the SHAIP cluster-randomized controlled trial in Kenya. *J Acquir Immune Defic Syndr.* 2015;69(5):e172-81.
 31. Kohler PK, Ondenge K, Mills LA, Okanda J, Kinuthia J, Olilo G, et al. Shame, guilt, and stress: community perceptions of barriers to engaging in prevention of mother to child transmission (PMTCT) programs in western Kenya. *AIDS Patient Care STDS.* 2014;28(12):643-51.
 32. Rahangdale L, Banandur P, Sreenivas A, Turan JM, Washington R, Cohen CR. Stigma as experienced by women accessing prevention of parent-to-child transmission of HIV services in Karnataka, India. *AIDS Care.* 2010; 22(7):836-42.
 33. Subramaniyan A, Sarkar S, Roy G, Lakshminarayanan S. Experiences of HIV positive mothers from rural South India during intra-natal period. *J Clin Diagn Res.* 2013;7(10):2203-6.
 34. Medema-Wijnveen JS, Onono M, Bukusi EA, Miller S, Cohen CR, Turan JM. How perceptions of HIV-related stigma affect decision-making regarding childbirth in rural Kenya. *PLoS One.* 2012;7(12):1-8.
 35. Turan JM, Hatcher AH, Medema-Wijnveen J, Onono M, Miller S, Bukusi EA, et al. The role of HIV-related stigma in utilization of skilled childbirth services in rural Kenya: a prospective mixed-methods study. *PLoS Med.* 2012; 9(8):1-12.
 36. Duff P, Rubaale T, Kipp W. Married men's perceptions of barriers for HIV- positive pregnant women accessing highly active antiretroviral therapy in rural Uganda. *Int J Womens Health.* 2012;4(1):227-33.
 37. Feliciano KVO, Kovacs MH. Vulnerabilidade programática na prevenção da transmissão materno-fetal da AIDS. *Rev Bras Saúde Matern Infant.* 2002;2(2):157-65.
 38. Cavalcante MS, Ramos Junior AN, Silva TMJ, Pontes LRSK. Transmissão vertical do HIV em Fortaleza: revelando a situação epidemiológica em uma capital do Nordeste. *Rev Bras Ginecol Obstet.* 2004;26(2):131-8.
 39. Costa TP, Leal MC, Mota JC, Machado ES, Costa E, Vianna P, et al. Comparison of pregnancy characteristics and outcomes between HIV-infected and HIV-non-infected women in Brazil. *AIDS Care.* 2013; 25(6):686-90.
 40. Chabikuli ON, Gwarzo U, Olufunso A, Reidpath D, Allotey P, Ibrahim M, et al. Closing the prevention of mother-to-child transmission gap in Nigeria: an evaluation of service improvement intervention in Nigeria. *S Afr Fam Pract.* 2013;55(1):96-102.
 41. Succi RCM. Mother-to-child transmission of HIV in Brazil during the years 2000 and 2001: results of a multi-centric study. *Cad Saúde Pública.* 2007; 23suppl3:S379-89.

42. Hermanides HS, Van Vught LA, Voigt R, Muskiet FD, Durand A, Van Osch G, et al. Developing quality indicators for the care of HIV-infected pregnant women in the Dutch Caribbean. *AIDS Res Ther.* 2011;8(1):32.
43. Calvet GA, João EC, Nielsen-Saines K, Cunha CB, Menezes JA, D'Ippolito MM, et al. Trends in a Cohort of HIV-infected pregnant women in Rio de Janeiro, 1996-2004. *Rev Bras Epidemiol.* 2007; 10(3):323-37.
44. Fernandes RCSC, Araújo LC, Medina-Acosta E. O desafio da prevenção da transmissão vertical do HIV no município de Campos dos Goytacazes, Rio de Janeiro, Brasil. *Cad Saúde Pública.* 2005;21(4):1153-59.
45. Lemos LMD, Gurgel RQ, Dal Fabbro AL. Prevalência da infecção por HIV em parturientes de maternidades vinculadas ao SUS. *Rev Bras Ginecol Obstet.* 2005; 27(1):32-6.
46. Pádua E, Almeida C, Nunes B, Cortes Martins H, Castela J, Neves C, et al. Assessment of mother-to-child HIV-1 and HIV-2 transmission: an AIDS reference laboratory collaborative study. *HIV Med.* 2009;10(3):182-90.
47. Creek TL, Ntuny R, Seipone K, Smith M, Mogodi M, Smit M, et al. Successful introduction of routine opt-out HIV testing in antenatal care in Botswana. *J Acquir Immune Defic Syndr.* 2007; 45(1):102-7.
48. Youngleson MS, Nkurunziza P, Jennings K, Arendse J, Mate KS, Barker P. Improving a mother to child HIV transmission programme through health system redesign: quality improvement, protocol adjustment and resource addition. *PLoS One* 2010; 5(11):1-8.
49. Delvaux T, Diby Konan J-P, Aké-Tano O, Gohou-Kouassi V, Bosso PE, Buvé A, et al. Quality of antenatal and delivery care before and after the implementation of a prevention of mother-to-child HIV transmission programme in Côte d'Ivoire. *Trop Med Int Health.* 2008; 13(8):970-9.
50. Sarnquist CC, Cunningham SD, Sullivan B, Maldonado Y. The effectiveness of state and national policy on the implementation of perinatal HIV prevention interventions. *Am J Public Health.* 2007; 97(6):1041-46.
51. Vasconcelos ALR, Hamann EM. Por que o Brasil ainda registra elevados coeficientes de transmissão vertical do HIV? Uma avaliação da qualidade da assistência prestada a gestantes/parturientes infectadas pelo HIV e seus recém-nascidos. *Rev Bras Saúde Matern Infant.* 2005;5(4):483-92.
52. Stinson K, Boulle A, Coetzee D, Abrams EJ, Myer L. Initiation of highly active antiretroviral therapy among pregnant women in Cape Town, South Africa. *Trop Med Int Health.* 2010; 15(7):825-32.

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