Applicability of the Three Delays Model in the context of maternal mortality: integrative review

Aplicabilidade do Three Delays Model no contexto da mortalidade materna: revisão integrativa

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ABSTRACT The objective of this review is to summarize evidence available in the scientific literature from the applicability of the Three Delays Model in the context of maternal mortality in terms of causal factors and interventional measures. It is an integrative literature review, carried out with no time frame, in seven databases, with the descriptors Maternal Mortality, Pregnancy Complications, Maternal Death and the keyword Three Delays Model. 15 studies were selected for analysis. The first delay stood out as a determinant of maternal deaths, with the refusal to seek obstetric care in the health institution an initiative of the woman or family members. In the second delay, geographic factors and poor road infrastructure made access to health services difficult. In the third delay, the care conditions in the health institutions implied a reduced quality of care. The applicability of the model makes it possible to demonstrate the barriers faced by women in the search for obstetric care and to visualize contexts that need interventional actions to face the problem.

KEYWORDS Maternal mortality. Pregnancy complications. Mortality. Models, theoretical. Cause of death.

RESUMO *O objetivo desta revisão é sumarizar evidências disponíveis na literatura científica provenientes da aplicabilidade do Three Delays Model no contexto da mortalidade materna quanto aos fatores causais e às medidas interventivas. Trata-se de revisão integrativa da literatura, realizada sem recorte temporal, em sete bases de dados, com os descritores Maternal Mortality, Pregnancy Complications, Maternal Death e a palavra-chave Three Delays Model. 15 estudos foram selecionados para análise. O primeiro atraso destacou-se como determinante para as mortes maternas, sendo a recusa em buscar assistência obstétrica na instituição de saúde uma iniciativa da mulher ou de familiares. No segundo atraso, fatores geográficos e infraestrutura precária das estradas dificultaram o acesso aos serviços de saúde. No terceiro atraso, as condições assistenciais nas instituições de saúde implicaram reduzida qualidade dos cuidados. A aplicabilidade do modelo possibilita demonstrar as barreiras enfrentadas pelas mulheres na busca de cuidados obstétricos e visualizar contextos que necessitam de ações interventivas para enfrentar a problemática.*

PALAVRA-CHAVE *Mortalidade materna. Complicações na gravidez. Mortalidade. Modelos teóricos. Causas de morte.*

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Introduction

The universal and opportune access to health care services in all stages of life cycle arises as a challenge for the global health care systems[1,2]. In the context of the pregnancy-puerperium cycle, the ensuring immediate and qualified access to the assistance constitutes determining factor of maternal-infant health, inasmuch as it congregates events with greater possibility of clinical and/or obstetric intercurrences[3,4].

When the health care systems are not sufficient or limited to meet women's demands or the inequalities and barriers prevent their effective outreach, it leads to a journey throughout the health care services system in search of assistance, that may cause an aggravation of the clinical pictures and negative outcomes, such as near miss and maternal death[3,4]. In spite the improvement of the indicators, the maternal mortality is yet considered high in developing countries, and many advancements are necessary to reach the targets of the 2030 Agenda[5], especially in order to elucidate the causes of maternal mortality and to direct efforts for the proposition of interventions.

In this sense, in order to understand maternal deaths, theoretical approach[6] that correlates this phenomenon to the use of health care services during pregnancy, childbirth or puerperium has revealed that the negative outcomes were associated to previous complications, to the delays in the women's access to the institutions of reference and to the progression to potentially serious situations.

This theoretical model proposed in the nineties, named Three Delays Model[6,7], when involving knowledge of different areas, such as Anthropology, Geography and Social Sciences, has become a reference to the analysis of the social causes that involve maternal deaths, since it highlighted not only its causal sequence, but, also, social and behavioral causes, related to individuals, to families and to communitarian contexts, correlating them to the access to health care systems[8].

The model is based on the identification and combination of factors and evidences related and grouped in three delays that may prevent women from receiving necessary maternal health care. The first delay refers to the decision of seeking for health care, the second is related to the path for reaching and obtaining care; and, finally, the third delay corresponds to the receiving of the adequate care in the access of health care services[7].

A synthesis of the evidences on the utilization of the Three Delays Model that included studies carried out in África, Ásia, Latin America and Caribbean described its potential in identifying barriers in the access to obstetric care in low and average-income countries, although with limited use in the triggering of preventive interventions[9].

Therefore, it is understood that the identification of the social, economic, reproductive and assistance conditions implied in the access to the obstetric services that result in predictive delays of maternal death represent an important dimension to subsidize the planning and the proposition of the intervention measures oriented to the qualification of the assistance offered and to the reduction of the maternal fatalities[2].

Objective

To summarize available evidence in the scientific literature resulting from the applicability of the Three Delays Model in the context of maternal mortality relating to the causal factors and to the intervention measures.

Material and methods

Type of study

Integrative review of the literature carried out through stages: 1) elaboration of the research question; 2) definition of the data basis and of

the criteria for the inclusion and exclusion of studies; 3) definition of the information to be extracted from the selected studies; 4) evaluation of the studies included in the review; 5) interpretation of the results 6) presentation of the review/synthesis of the knowledge[10].

Elaboration of the research question

Therefore, the research started based on the construction of the guiding question: which causal factors and intervention measures are available in the scientific literature resulting from the applicability of the Three Delays Model in the context of maternal mortality?

Establishment of inclusion and exclusion criteria

Were defined as inclusion criteria the scientific researches published in Portuguese, English, Spanish or French, that used the Three Delays Model to comprehend the factors directly implied in the 'delays' that cause maternal mortality. It was decided not to use the publishing time cutting, in order to reach greater amount of studies. Were excluded literature review articles, thesis, dissertations and studies that did not answer to the research question.

Data sources and search strategies

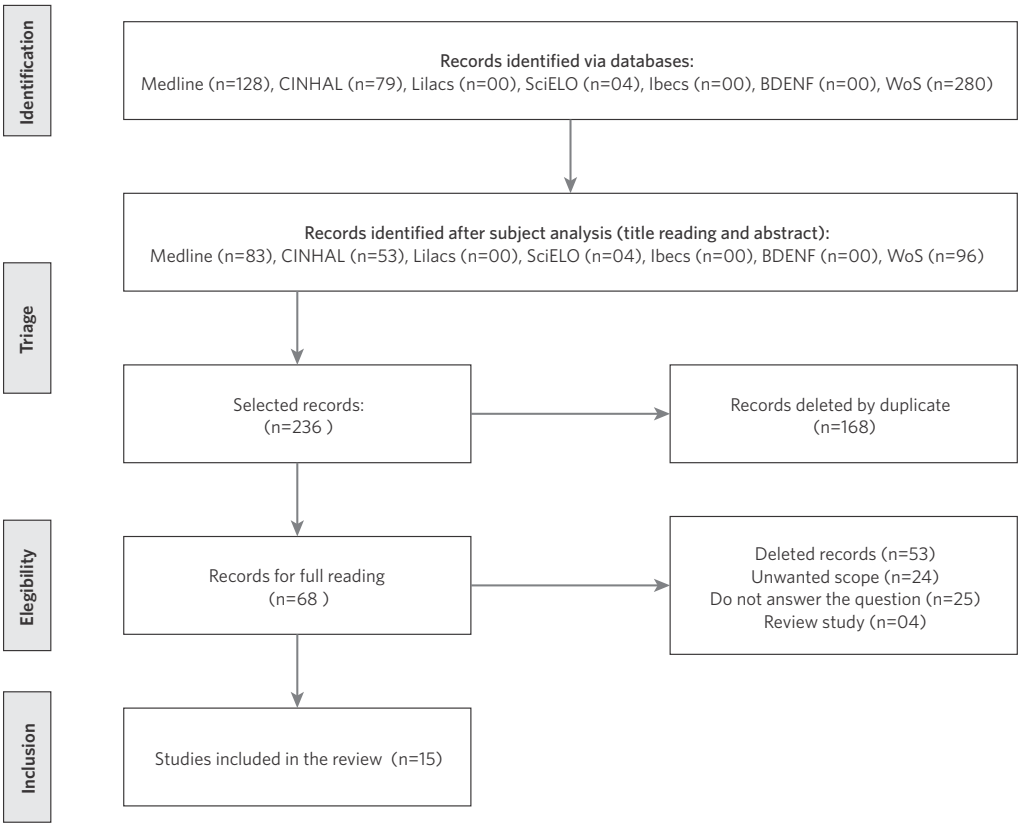
The paired search was carried out between June and August 2021, through the periodical portal of the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), in the databases Medical Literature Analysis and Retrieval System Online (MEDLINE) and Cumulative Index to Nursing And Allied Health (CINAHL) through EBSCO Information Services, Banco de Dados em Enfermagem (BDENF), Web of Science (WoS), Literatura da América Latina e do Caribe em Ciências da Saúde (LILACS), and Índice Bibliográfico Espanhol de Ciências da Saúde (IBECS) and virtual library Scientific Electronic Library Online (SciELO).

It was employed the advanced search form. And, as search strategy, the combination of controlled descriptors, chosen through the PCIo strategy – Population = pregnant women; Phenomenon of interest = complications in the course of pregnancy arising from an intervening factor, delay; and Context = maternal death. (Maternal Mortality, Pregnancy Complications, Maternal Death), contained in the structured vocabulary of the Medical Subject Heading (MeSH), a key-word (Three Delays Model). The crossing occurred through the boolean operator AND, resulting in three search keys: 1) Maternal Mortality AND Three Delays Model; 2) Pregnancy Complications AND Three Delays Model; e 3) Maternal Death AND Three Delays Model, in a standardized manner in all the databases.

The stage relating to the databases search in the virtual library was carried out by two independent researchers. Initially, were identified 491 primary references. After sorting, carried out through the reading of the title and the summary and careful analysis based on inclusion and exclusion criteri, 15 articles composed the sample. During the process, when there was divergence in the selection of the studies, the researchers gathered in order to decide about the articles to be included.

It was employed the flowchart adapted from the Preferred Reporting Items for Systematic Review and Meta-Analyses (PRISMA)[11] in order to demonstrate the operationalization of the search and of the selection, according to *figure 1*.

Figure 1. Flowchart of the process of search and selection of primary studies



Source: Adapted Page et al.[11].

Information extracted from the selected studies

An instrument for the extraction of data was elaborated, divided in three sections containing the items related to the articles´characterization data (authors, year, article's title, database, journal); methodological characterization (delineation, sites, participants, study scenarios and data collection technique and, finally, aspects related to the phenomenon of maternal fatality and delays that guided the applicability of the Three Delays Model, the causes, the causal factors and the intervention measures) in the articles reviewed.

Evaluation of the studies included in the review

For the evaluation of the methodological quality of the studies included in the sample, was employed the evaluation by level of evidence, being: level I, the meta-analysis of multiple controlled studies; level II, the individual study with experimental design, level III, the study with quasi-experimental design, having as an example a study without randomization with single group pre-test and post-test, time series or case-control; level IV, the study with non-experimental design, descriptive correlacional research and qualitative or case studies;

level V, case reports or data obtained in systematic way, of verifiable quality or program evaluation data; and, in the level VI, opinion of respected authorities based on clinical competence or opinion of committees of experts, including interpretation of information not based on researches[12].

Interpretation of results and presentation of the knowledge synthesis

For the analysis, it was employed the data reduction method[10] that involved the division and the classification of the primary sources in subgroups through organization, codification and data gathering based on similarities and divergences, aiming to identify patterns, topics or connections which shall enable in a logical structure the data comparison, facilitating, thus, the analysis process. The results were interpretatively analyzed from the recurrent patterns that emerged and presented through descriptive synthesis and figures. And, finally, were discussed in conformity with the literature on the subject.

Results

In the data collected in *table 1*, lies the characterization of the studies that applied the Three Delays Model to comprehend the determining aspects of the delay to receive and/or to offer assistance in the context of maternal mortality.

Table 1. Characterization of primary studies regarding identification data and methodological aspects

Authors/Year	Databases	Delineation	Locations, participants and study´s scenarios	Data collection technique	Applicability of the model	Level of evidence
Barnes-Josiah, Myntti, Augustin, 1998[13]	WoS, CINAHL, Medline	Qualitative-quantitative, descriptive	Haiti. Spouses, mothers, relatives, health care professionals, midwives Hospital-maternity and rural and urban homes.	Interview and verbal autopsy.	1º, 2º and 3º delays	Level 4
Mazza, Vallejo, Blanco, 2012[14]	SciELO	Descriptive, transversal, retrospective	Venezuela. Medical, epidemiological records Hospital-maternity.	Documental, using forms	1º, 2º and 3º delays	Level 4
Thorsen, Sundby, Malata, 2012[15]	WoS	Qualitative, descriptive, retrospective	Malawi. Health care team, relatives, neighbors, midwives. Hospital-maternity and homes.	Documental, using forms, semistructured interview	1º, 2º and 3º delays	Level 4
Laddunuri, 2013[16]	WoS, CINAHL, Medline	Qualitative, descriptive	Tanzania Close relatives and rural homes.	Verbal autopsy	1º, 2º and 3º delays	Level 4
Esscher, Binder-Finnema, Bodker, Högberg, Mulic-Lutvica, Essén, 2014[17]	WoS, Medline	Qualitative, descriptive	Sweden Patient records and hospital-maternities.	Document audit	1º, 2º and 3º delays	Level 4
Mgawadere, Unkels, Kazembre, Broek, 2017[18]	WoS, CINAHL, Medline	Qualitative-quantitative, descriptive	Malawi. Family members, midwives, neighbors Patient´s documents. Homes and hospital-maternity.	Documental (medical records, death certificate) and verbal autopsy with questionnaire	1º, 2º and 3º delays	Level 4

Table 1. (cont.)

Authors/Year	Databases	Delineation	Locations, participants and study´s scenarios	Data collection technique	Applicability of the model	Level of evidence
Pagalday-Olivares, Sjöqvist, Beek, Abudey, Silberberg, Buendia, 2017[19]	WoS, CINAHL, Medline	Qualitative, descriptive	Gana. Health care team members, midwives. Homes and hospital-maternities.	Semistructured interview, focal groups	1º, 2º and 3º delays	Level 4
Sheikh, Paswan, Anand, Mondal, 2019[20]	WoS, CINAHL, Medline	Qualitative-quantitative, descriptive, retrospective	India relatives and close neighbors Hospital-records Hospital-maternity and domiciles.	Documental through forms and verbal autopsy	1º, 2º and 3º delays	Level 4
Nabieva, Souares, 2019[21]	WoS, CINAHL, Medline	Qualitative, descriptive, interpretative	Tajiquistão. Women, relatives, health care professionals. Hospital-maternity and homes.	Verbal autopsy, focal group and interview	1º and 2º delays	Level 4
Kaiser, Fong, Hamer, Biemba, Ngoma, Tusing et al., 2019[22]	WoS, CINAHL, Medline	Qualitative, transversal	Zâmbia. Men and expectant women with child under two years old, relatives, midwives. Homes	Semistructured interview, focal group	1º, 2º and 3º delays	Level 4
Ngoma, Asiimwe, Mukasa, Binzen, Serbanescu, Henry, 2019[23]	Medline	Qualitative, quantitative, analytics	Uganda and Zâmbia. Patient record, women users of the services. Hospital-maternity and homes.	Documental, verbal autopsy,focal group, interview	2º delay	Level 4
Sk, Paswan, Anand, Mondal, 2019[24]	WoS, CINAHL	Qualitative-quantitative, descriptive	India Relatives Hospital-maternity.	Medical records review and verbal autopsy	1º, 2º and 3º delays	Level 4
Omer, Zakar, Zakar, Fischer, 2021[25]	Wos; CINAHL; Medline	Qualitative-quantitative, descriptive	Paquistan. Health care professionals, relatives Hospital-maternity and community.	interview; focal groups, case studies.	1º delay	Level 4
Mohammed, Gelany, Eladwy, Ali, Gadelrab, Ibrahim et al. 2020[26]	WoS; CINAHL	Qualitative-quantitative, descriptive	Egypt. relatives, health care professionals, midwives. Hospital-maternity.	Medical record and verbal autopsy	1º and 3º delays	Level 4
Aden, Ahmed, Östergren, 2019[27]	WoS; CINAHL; Medline	Qualitative-quantitative, descriptive.	Somália. Relatives, neighbors, communitarian health agents. Hospital-maternity and community.	Verbal autopsy and records.	1º, 2º and 3º delays	Level 4

Source: Own elaboration.

In the researches analyzed, the African continent[15,16,18,19,21,23,26,27] obtained prominence in conducting the studies about the topic, and, regarding the developing countries, Malawi[15,16] and Zâmbia[21,23], were prominent as research scenarios.

The central participants of the studies varied from family members close[15,16,18,19,21,23,26,27] to the woman who died, health care professionals[13,15,19,22,25,26] that cared for the woman any time before her death, midwives[13,15,18,19,22,26], and close neighbors[15,18,20,27]. Some data collections were carried out in the patient´s promptuary records[14,17,20,23,24,26].

Regarding the collection scenario, were prominent the health care institutions[13-15,17-21,23-27] and the domiciles (communities) of the participants in the studies[13,15,16,18,23,25,27].

The predominant data collection technique was documental[14,15,17,18,20,23,26,27], associated to the verbal autopsy[13,16,18,20,21,23,24,26,27]. Among the

delays regarding the Three Delays Model analyzed in the primary studies, it was evidenced that the second delay[13-23] was prominent in the studies, followed by the first[13-22,24,26] and by the third[13-20,22,24,26].

Among the factors related to the first delay, it was observed that the decision-making of not seeking for a health care institution came, mainly from the woman[15,17,20,24,27], was decided by the spouse/partner[15,22] and/or father/mother-in-law[21,22] or influenced by other members of the family group[15], neighbors and close friends[13,15].

In the community, the custom of having the home birth (and they occur with no intercurrences)[24,26] and the beliefs constituted an important agent in this decision-making process, considering that the alternative care offered, especially by healers, were more widely accepted by the population than the assistance offered by health care institutions[13,15,18,20-22,24], since it was believed that the chances of cure were higher, because the healers invoked spiritual entities.

In the cultural aspects, were prominent the factors related to the customs rooted in the patriarchate centralized in the decisions of the male figure. Therefore, the woman, at times, was prevented by her spouse, partner or even father-in-law from seeking for hospital assistance, remaining as her only option to rely on care from a midwife. Bearing in mind that many were from the community, the men would not have to pay for transport or assistance. The midwives were considered by the community as holders of more experience and better dexterity for the handling of the childbirth and its possible complications[15,18,21,22].

Among the socieconomic factors, were prominent the poor financial condition, the scarce resources (poverty)[13,15,17,18,24,26,27], and the low education level[15,20], demonstrating that, the lower were the income and the educational level, more scarce was also the option and/or search for professional help and greater was the refusal of the treatments offered.

The bad experiences lived previously in health care institutions by the women themselves[13,14,18-20,26] or by close relatives or friends[13,14,18-20], the quality of the care offered perceived as ineffective or bad quality[13,17,18,22,26], the lack of autonomy of the woman in deciding about going to the health care institution[14] and the lack of supporters[22], were, also, impediments to the search for health care.

The women´s scarce knowledge about the obstetric risks[14-20,25-27] and their relatives'[15] and about the need to seek for health care assistance were decisive factors for the later progress of the clinical condition and of the impossibility of reversion.

Regarding the geographic location, it was perceived the correlation between the aggravation of the health clinical condition due to the distance traveled between the woman´s home and the health care institution[13,15,17,18,20], highlighting that, the higher were the distances and barriers to reach care, lower were the possibilities of reversion of the clinical condition.

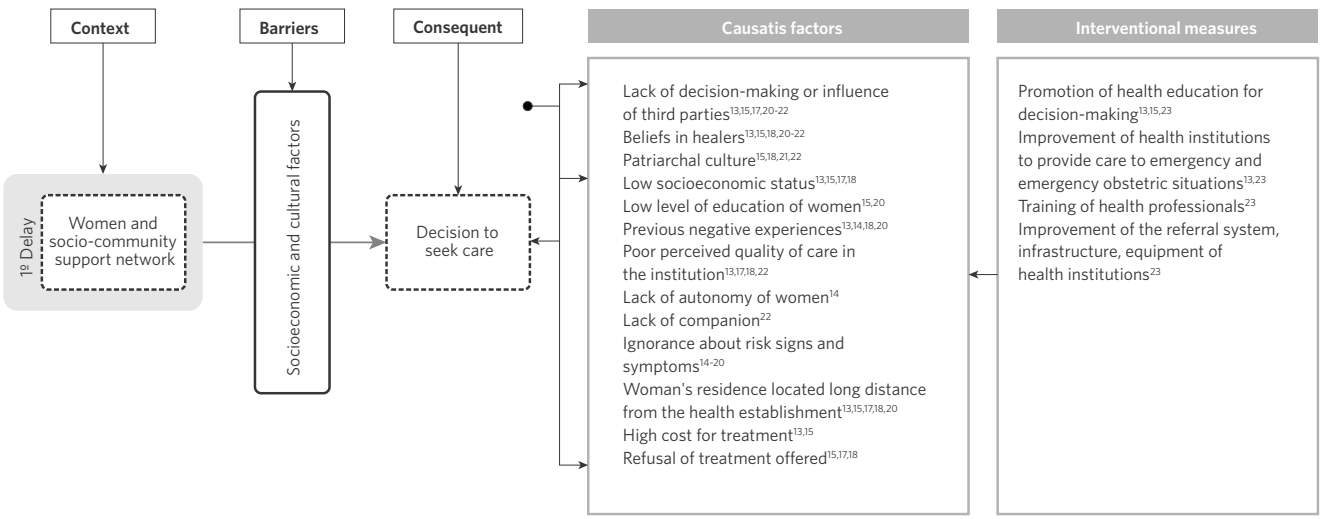
It was observed, yet, that the seeking for emergency obstetric care was prevented, mainly, by the elevated cost[13,15], and the refusal to the treatment offered was justified by the lack of reliability on the procedures carried out, by the unreliability on the health care professional, perception of reduced dexterity of the professional that would perform the health care or abbreviated knowledge of the health care professional[15,17,18].

Some interventions were described for the resolution or reduction of those issues related to the first delay, such as the promotion of education in health for women and their relatives in order to improve the decision-making problem[13,15,23]; the designing of programs turned to the implementation of improvements in the health care institutions in the care for the obstetric urgency and emergency situations, especially the emergency childbirths[13,23], with the availability of health care professionals trained to manage possible complications; unification and improvement of the referring systems[23], in order to allow the woman to, when arriving at the health

care institution, she would already have a team ready to welcome her. It was observed, yet, that the managers concern relating to the need to improve the infrastructure of the roads, of the equipments of the health care institutions and with the health care professionals qualification[23].

On *figure 2*, it is presented a synthesis of the causal factors and of the intervention measures related to the first delay.

Figure 2. Synthesis of causative factors and interventional measures related to the first delay



Source: Own elaboration.

The tough geographic accessibility was mentioned as one of the main causal factors of the second delay, due to the poor distribution of the health care institutions in the territory, especially in areas close to the community[13,16,19,23], which can cause the increasing of the distance of the health care institution from the woman´s home, the lack of health care institutions in some communities[18,24,27], reduced infrastructure of the roads[18,19], geographic barriers (such as mountains[15], rivers[18]), in addition to the bad quality of the road network[15,18].

In the aspect related to the displacement, the delay occurred, mainly, due to the lack[18] or unavailability of transport[13,15-20,23] and ambulances[18]. Due to elevated costs[16,18,20-23] and to the necessity of a long time journey for the woman´s transfer[15,18,21,23].

Were observed, in the decision-making delay, failures in the woman's referral[14-17,20,23] by the health care professional for a specialized health care service, in order to allow her to have treatment in opportune time for the reversion of her clinical condition.

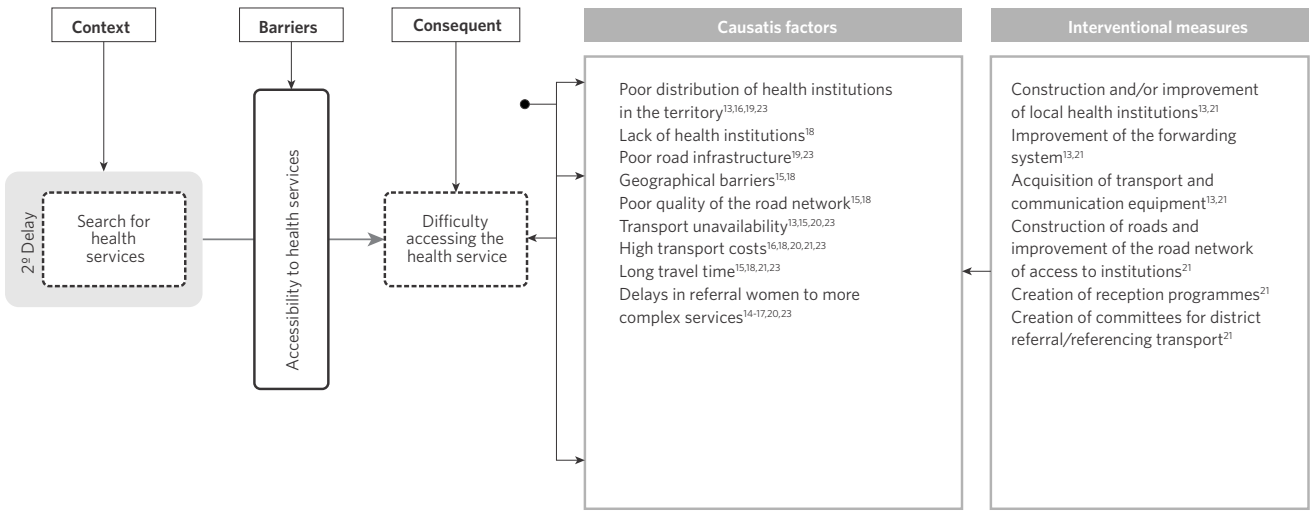
Were outlined as strategies for the reduction of the causal factors of the second delay the construction and/or the improvement of the health care institutions near the communities[13,23], the designing of more effective systems for the displacement of the women and the communication between health care teams involved. and the improvement of the transport fleet with the acquisition of ambulances, motorcycles and communication equipments, such as two-way radios[13,23].

It was also noticed the need to repair or to build roads used as access to the health care institutions; of implementation of support programs to the pregnant women with high risk pregnancies in the reference health care

institutions; of establishing district transport committees to regularize the forwarding system and the coordination of ambulances for the referencing[23]; and of more training of the health care teams inserted in the communities for the accompaniment of the childbirth and of the puerperium in a secure manner[23].

On *figure 3*, there is a synthesis of the causal factors and of the intervention measures related to the second delay.

Figure 3. Synthesis of causative factors and interventional measures related to the second delay



Source: Own elaboration.

Among the causal factors of the third delay, were highlighted the failures in the decision-making process by the health care professionals, such as: not forwarding in opportune moment still effective for the woman to have her condition reverted in a specialized health care institution, with the possibility to have a higher complexity care[13,17,20,23,26]; forwarding several times[14]; reference systems and communication deficits between health care teams[19]; wrong diagnosis[15,17,18], imprecise[13] and late[14,15,18,20]; and inadequate care offered[15,17,20,24]; and delay in the decision-making, by the professional, for the women´s care when she can reach the health care institutionsaúde[16-18,20,24].

Regarding the management of material resources, it was highlighted the lack of medication[15,20,26], specifically, magnesium sulfate[18], hydralazine[15] antibiotics[18]. Lack of supplies[14], such as blood[15,16,18,20,22,26] and scarcity of materials[14] for the trivial procedures in the maternities, such as gloves[18], equipments in general[18,20], and ITU beds[13,14].

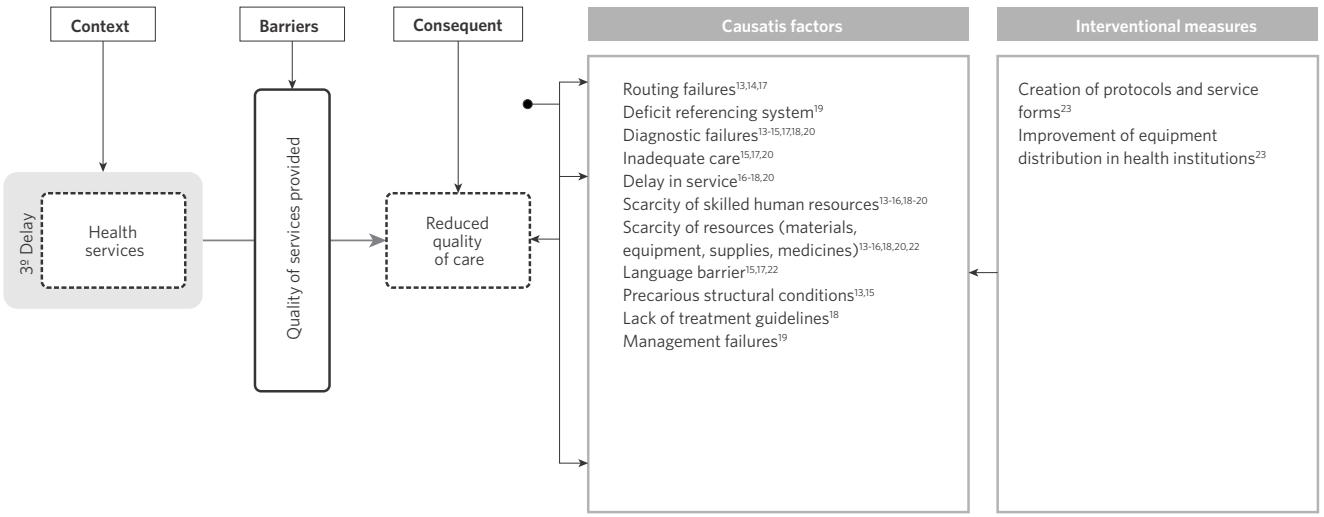
The ineffective management of the human resources and the insufficiency of professionals were pointed out as causal factors of failures in the assistance[13,14,19,20]. The inadequate or insufficient communication between members of the team or of those with the patient and/or relatives were highlighted as gaps in the assistance offered[15,22], as well as the inadequate communication due to the language[17].

Were evidenced, also, the absence of qualified human resources[13-16], professionals with limited technical abilities[15,18], precarious

structural conditions of the health care institutions[13-15], lack o guidelines for the treatment[18] and unsatisfactory management of professionals and hospital administration [19]as factors that influence the women's care.

As intervention measures, were mentioned strategies such as: the designing of protocols and assistance forms directed to the standardization of the care in the emergency services and the improvement of the distribution of the equipments in the different health care institutions[23]. On *figure 4*, it is presented a synthesis of the causal factors and of the intervention measures related to the third delay.

Figure 4. Summary of causative factors and interventional measures related to the third delay



Source: Own elaboration.

Discussion

The occurrence of maternal losses results from biological, social, economic, cultural and behavioral interactions. Those are more significant in developing countries, especially in the average and low income social classes, resulting from the associating of contributing factors to its occurrence[28].

The delays in the obstetric assistance are directly connected to the unfavorable maternal outcomes. The occurrence of maternal fatality results in a destructuring for the familiar nucleus, especially when she is the provider, and evidences the necessity to comprehend the existing limitations in the health care systems, in order to eliminate the barriers that contribute to this delays.

It is highlighted that the lower social classes, in addition to having precarious life conditions, have less accessibility to the health care services, due to the lack of knowledge, precarious roads, transport or even limited financial conditions. Therefore, some of the factors contributing to the occurrence of delays that lead to maternal death include educational, financial geographic of quality nd availability of transport, roads and health care services barriers[29].

The limited access to education, to the labour market or to the adequate resources prevent women from obtaining the necessary obstetric care[30]. Women who can reach the health care services, at times, do not get proper assistance, which prevents the identification of the risks at the appropriate moment, besides pushing them away from the health care services, thus they do not see the assistance offered as effective[29].

Therefore, the quality perceived by the woman or by her supporters regarding the health care influences directly the decision of seeking for care[31,32].

To face the high maternal mortality taxes, the actions shall be coordinated and integrated between the woman, the family/communal nucleus, the State, the health care services and the community. Therefore, the access of the population to obstetric care shall be universal, integral and equal, however, it is perceived that this continues to be a challenge in many countries[29].

Beliefs, culture, practices and customs of a determined place are direct influencers in the search for professional health care. Imposed patriarchal values present in daily life restrict women in decision-making to seek for health care, and the lack of autonomy delays the receiving of opportune health care[28,33].

Exist, yet, institutional barriers when the woman reaches the services, such as the lack of properly qualified health care professionals to conduce or to revert aggravated clinical conditions is fundamental in order to assure prevention of maternal mortality, a phenomenon that constitutes a public health problem. Therefore, the quantitative and qualitative characterization of the maternal mortality becomes relevant, bearing in mind the necessity to to recognize the diverse particularities that involve this phenomenon in varied regions of the world[34].

Thus, measures that aim to improve the formation of health care professionals that care for the expectant mothers; parturients and recently given births, aiming to avoid maternal fatality by assuring a secure assistance are necessary. Wide and articulated actions that aim an effective change of the current care model of the obstetric assistance are essential, considering the difficulties highlighted in the obstetric care and the high number of avoidable fatalities[35]

Thus, the use of scientific parameters, such as applicability of a model, allows to estimate which are the factors involved and how they interact for the adverse result for that life, thus the reduction of the fatalities will only be reached when the actions visualize the particularities of the social problems, the diverse cultures, the health care systems and the different realities experienced by women, bearing in mind that the analysis of the delays provides data about the determinants implied in maternal deaths.

Study limitations

The limitations of the study are associated to the terms employed in the search strategy, considering that the non-existence of specific controlled descriptors that would represent the model being studied and the adoption of key-word for the search may have interfered in the results. Besides that, the adoption of eligibility criteria related to the language and the specific database group of the health care area may have limited the scope of the search.

Contributions for the health care area or public policy

From the Three Delays Model presented, this study provides subsides for the discussion and planning of the proposals, strategies and/or intervention measures, that aim the reorientation of the policies and the implementation of effective practices capable of tightening relations between legislation, public policies and assistance

offered, turned to the confrontation of the problematic associated to the access to the health care services that result in unfavorable maternal-infant outcomes, especially in the context of developing countries.

Final considerations

This review allowed to synthesize contexts, barriers and consequences associated to the delays for the access to the services, offer and obtaining of health care in the context of maternal mortality. It was highlighted that the application of the Three Delays Model occurs more often in the first delay, that embraces the decision to seek for care. The causal factors of the first delay are more elucidated, in contrast, the intervention measures described associated to the third delay, that embraces the receiving of adequate health care are scarce.

This model has proven to be a valuable instrument for the analysis of the phenomenon of maternal mortality in different realities of health care, inasmuch as it helps to comprehend the factors associated to mortalities which the origins do not come only from obstetric complications, however for a complex net of delays coming from the community and from the reality of health care in which that woman is inserted.

Therefore, the comprehension of those factors, through an integrated approach, allows to know better the phenomenon and, through strategies and public policies, to direct efforts for confronting the barriers imposed to women in the access to the obstetric services, making then possible, the offer of a secure qualified assistance through the pregnant and puerperal cycle.

Collaborators

Calou CGP (0000-0003-3488-6965)* and Cruz RSBLC (0000-0002-4596-313X)* contributed to design the study/research and analysis and/or interpretation of the data. Santos PSP (0000-0001-6463-7316)*, Belém JM (0000-0003-1903-3446)* and Oliveira DR (0000-0003-2911-141X)* contributed to design the study/research, analysis and/or interpretation of the data and final review with the critical and intelectual participation in the manuscript. ■

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