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Social determinants of health in pregnancy: the impact of Migration

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Em todos os artigos colaborei ativamente na definição e operacionalização das hipóteses, tendo sido responsável pela recolha de dados, análise e sua interpretação. Redigi a versão inicial dos manuscritos e colaborei ativamente na preparação das versões finais de todos os artigos.

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"All medicine is inescapably social."

Leon Eisenberg

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Glossary of Acronyms

ARSN: Northern Regional Association of Health

BDI-II: Beck Depression Inventory II

CSDH: Commission on Social Determinants of Health

DGS: General Directorate of Health

DM: Diabetes Mellitus

EU: European Union

EPDS: Edinburgh Postpartum Depression Scale

FCT: Foundation for Science and Technology

GEP: Municipal Department of Studies and Planning, Porto

HIV/AIDS: Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome

HT: Hypertension

INE: National Institute of Statistics

IOM: International Organization for Migration

MHI-5: Mental Health Inventory 5

NGO's: Non-governmental organizations

NHS: National Health System

OECD: Organisation for Economic Cooperation and Development

OI: Immigration Observatory

PALOP: African Countries of Portuguese-speaking

PCA: Principal Component Analysis

PSS: Perceived Stress Scale

SEF: Foreign and Borders Service

SES: Socioeconomic status

SSSS: Scale of Satisfaction with Social Support

TB: Tuberculosis

UN: United Nations

UNICEF: United Nations Children's Fund

WHO: World Health Organization

ABSTRACT

Abstract

The present investigation seeks to establish itself as an interface between Public Health and Social Medicine. Its main purpose relies in assessing theoretical inequalities in access, utilization and quality of maternal health care in immigrant recent mothers and its interaction with social determinants of health.

The underlying research plan[1] was designed to explore specific clinical, individual and social determinants in maternal health (during pregnancy and postpartum). Another specific goal is the assessment of access, utilization and quality of the received care (adequacy and satisfaction of responses offered by the public health system by its users), establishing a comparison between health status, perceptions and needs of immigrant and native women in the same conditions and motherhood stages.

Data was collected in all reference hospitals and several civilian associations of Porto metropolitan area, to better reach the targeted population: recent immigrant mothers from the countries with the highest representation in Portugal at the date (Brazil, African countries of Portuguese speaking and Eastern European countries), as well as Portuguese women (for comparison).

To accomplish the defined objectives, three studies were performed using data obtained in all defined backgrounds, following different methodological approaches and designs (qualitative and quantitative strategies), considering distinctive aims.

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1. Maternal healthcare in Migrants: a Systematic Review

An initial approach to the scientific work and state of art in the field of Migration and Health included a systematic review of literature, published in the past two decades. The main objective was to evaluate the access, use and quality of healthcare in migrant population during pregnancy and postpartum period, with particular emphasis on how this interferes with maternal health indicators or outcomes. The scientific literature reviewed was contained in the MEDLINE and SCOPUS databases. Searching for population based studies published between 1990 and 2012 and reporting on maternal healthcare in immigrant populations was carried out. A total of 854 articles were retrieved and 30 publications met the inclusion criteria, being included in the final evaluation. One of the central inherent aspects in this review study is related to the non-exclusion of qualitative studies per se, since we believe that these are essential in providing indications and sensitive information of extreme relevance from the perspective of users, which ultimately determine demand, access and effective use of available services. The majority of studies point to a higher health risk profile in immigrants, with an increased incidence of co-morbidity in some populations, reduced

access to health facilities particularly in illegal immigrants, poor communication between women and caregivers, a lower rate of obstetrical interventions, a higher incidence of stillbirth and early neonatal death, an increased risk of maternal death, and a higher incidence of postpartum depression. Incidences vary widely among different population groups.

2. Qualitative study

Literature shows that cultural differences tend to affect not only healthcare use but also the perceived quality of provided services. Through qualitative strategies (semi-structured interviews), the aim was to make an assessment of perceived needs and cultural challenges that potentially influence the subjective perceptions of the migrant population. Such perceptions can affect services' request and adherence to treatment and effectively achieving behaviour health advice. It was also intended to evaluate barriers and facilitators pre-specified in the literature about accessibility and use of healthcare in migrant populations that can contribute to negatively affect services medical quality. Additional purpose included to explore and clarify the role of migration in health: recent investigation trends have been highlighting the role of social determinants and experiences during illness. In this light, it becomes relevant to consider the contexts and conditions in which migrants live in order to understand their health behaviours, needs and beliefs that accompany the demand for healthcare services. Constructs linking poverty, socioeconomic status and education and their respective impacts in health status are key aspects for the comprehension and development of useful lines of research in public health. Thus, information was collected on length of stay in the host country, legal status, country of origin, language barriers, economic and socio-cultural conditions, income, living and working conditions, education level and perceptions about the quality of care and attention by health professionals (patients' satisfaction), involvement with civilian associations and social integration.

Thirty one participants were recruited in civilian associations and non-governmental organizations, were they received social and economic support. The sampling was purposive, gathered by a referral process, between November 2011 and February 2012. Pre-specified inclusion criteria included pregnant women and recent mothers living in Porto and its metropolitan area, with availability and interest in participating in research. All women were of a low social-economic status: the purpose was to observe if migration played an additional impoverishment role in health, if low social-economic condition was maintained stable (migration as a social determinant of health?). Included immigrant women were born outside the national territory and have foreign parents themselves: Eastern European countries, Brazil and African countries of Portuguese speaking (most representative ethnic groups of the Portuguese immigration context, at the date). Results showed that misinformation about legal rights and inadequate clarification during medical appointments

frequently interacted with social determinants, such as low social-economic status, unemployment, and poor living conditions, to result in lower perceived quality of healthcare.

3. Quantitative study

A cross-sectional study was planned to evaluate possible differences in obstetrical care (and maternal health outcomes) between immigrant and native women where free healthcare is declared to be available to all during pregnancy, irrespectively of women's legal status. Another goal of this study was to compare the odds of stress, low social support, impoverished mental health and depression in immigrant and native women in the postpartum period.

Included immigrant women followed the previously presented definition and criteria (89 immigrant women included). All women (277 participants) were recruited through referral hospitals (Hospital de S. João, Centro Hospitalar de Vila Nova de Gaia e Espinho, Centro Hospitalar do Porto – Maternidade Júlio Dinis and Hospital Pedro Hispano). Approval was gathered during 2011 among Executive and Ethics Committees of all institutions. In all institutions, the Director of Obstetrics and Gynaecology was contacted and involved in the research project. The monitoring of consent, compliance and interest in participating in the study was made through this coalition.

A self-filling questionnaire was applied during previously scheduled home visits, allowing data collection about a number of relevant topics: demographic and social conditions (socioeconomic status, education level, income, employment status and household composition), lifestyles and health behaviours, gynaecologic, obstetric and general medical history, characterization of prenatal care and postpartum medical attention, symptoms and co-morbidities prenatally and postpartum, cultural health habits and practices (when applicable) and migration specific issues. Some health indicators advanced by the EURO-PERISTAT European study were also considered to explore, constituting a mean of identifying and assessing the intended determinants of health in migrants and Portuguese women (core, recommended and recommended for future research; e.g. indicators and recommendations in maternal health and health services, including prevalence of severe maternal morbidity, perineum trauma and postpartum depression, as well as distribution of timing for first antenatal visit); variables frequently associated with pregnancy and postpartum complications were also measured. Additionally, four specific validated scales were applied: Perceived Stress Scale (Cohen, Kamarck & Mermelstein, 1983; Pais Ribeiro, 2009) (1, 2), Satisfaction Scale of Social Support (Pais Ribeiro, 1999) (3), Mental Health Inventory 5 (Veit & Ware, 1983; Pais Ribeiro, 2001) (4, 5) and Edinburgh Postpartum Depression Scale (Cox, Holden & Sagovsky, 1987; adaptation and validation of Portuguese version: Augusto, Kumar, Calheiros, Matos & Figueiredo, 1996; and Areias, Kumar, Barros &

Figueiredo, 1996) (6-8) after delivery (following the proposed recommendations defined by the General Directorate of Health) (9). Obstetrical data were complemented and confirmed with information from the mother's pregnancy health book, a record of prenatal and intrapartum clinical data that is given to all pregnant women in Portugal. This evaluation occurred between 2-3 months postpartum, to establish a relationship of continuity between potential determinants and health outcomes.

A total of 277 answered questionnaires were obtained, 89 from migrants and 188 from native Portuguese women. Results show that migrant women were more prone to have their first pregnancy appointment after 12 weeks of gestation (27% vs. 14%, $p=0.011$), and to have less than 3 prenatal visits (2% vs. 0%, $p<0.001$) but no significant differences were found in overall number of appointments or attendance of parental classes. Urinary infections and placental abruption was more common in Portuguese women. Migrant women were more likely to have a cesarean section (48% vs. 31%, $p=0.023$), a perineal laceration (48% vs. 12%, $p<0.001$), and postpartum hemorrhage (33% vs. 12%, $p<0.001$). No significant differences between the groups were found in the prevalence of preterm delivery, low-newborn weight and fetal malformations. Migrants were more likely to be unsatisfied with the support of administrative staff and doctors during pregnancy. Additionally, data showed that migrants had an increased odds for low social support (OR=6.118, 95%CI=[1.991; 18.798]), and for developing postpartum depression (OR=6.444, 95%CI=[1.858; 22.344]), but this seems unrelated with high perceived stress and impoverished mental functioning after delivery.

Major conclusions of this investigation include:

✓ Low socioeconomic and less educated migrant populations are at a higher risk of serious complications during pregnancy, for reasons that include reduced access and use of healthcare facilities, as well as less optimal care, resulting in a higher incidence of adverse outcomes.

✓ There is a need to change the focus from accessibility of immigrant women to healthcare, which seems to be largely guaranteed in Portugal, to ensuring the quality of care. However, this change of focus should be performed with caution considering current social changes in Europe in a context of economic crisis (in some countries migrants' access to health is a lost reality, and turns out to be very important to evaluate the applicability of this concept). Special attention needs to be given to the most vulnerable populations in order to improve healthcare.

- ✓ Data suggested that healthcare depends not only on accessibility but especially in social opportunities. Therefore, equitable public health action must provide individuals and groups the equal opportunity to meet their needs, which may not be achieved by providing the same standard care to all.

- ✓ Even with free healthcare during pregnancy, immigrant women are more prone to late and absent prenatal care. They have a higher rate of caesarean section, and intrapartum complications. Unawareness for some cultural aspects and differences and unsatisfactory communication with healthcare staff may lay an important role in these findings.

- ✓ As socioeconomic and subjective individual experiences are achieving greater impacts in health, those factors must be urgently integrated into medical care in order to re-establish social justice.

RESUMO

Resumo

A presente investigação procura estabelecer-se como uma interface entre a Saúde Pública e a Medicina Social. O objetivo principal visa sobre a avaliação das desigualdades teóricas no acesso, utilização e qualidade dos cuidados de saúde materna em mães imigrantes e sua interação com os determinantes sociais da saúde.

O plano de investigação subjacente a esta tese [2] foi concebido para explorar determinantes clínicos, individuais e sociais específicos de saúde materna (durante a gravidez e pós-parto). Outro objetivo específico reside na avaliação do acesso, utilização e qualidade da assistência recebida (adequação e satisfação das respostas oferecidas pelo Sistema Nacional de Saúde), estabelecendo uma comparação entre o estado de saúde, as perceções e as necessidades das mulheres imigrantes e nativas, nas mesmas condições e fases da maternidade.

Os dados foram recolhidos em todos os Hospitais de referência da área metropolitana do Porto e nas principais associações cívicas, para melhor alcançar a população-alvo: mães recentes imigrantes dos países com maior representação em Portugal (Brasil, países Africanos de língua oficial Portuguesa e países do Leste Europeu), bem como mulheres portuguesas (para comparação).

Com o intuito de satisfazer os objetivos definidos, três estudos foram realizados utilizando os dados obtidos no decorrer do trabalho de campo, nos contextos mencionados, seguindo diferentes abordagens metodológicas e desenhos de investigação (estratégias qualitativas e quantitativas), considerando objetivos distintos.

1. Cuidados de saúde materna nos Migrantes: uma Revisão Sistemática

Uma primeira abordagem ao trabalho científico e estruturação do estado da arte no domínio da Migração e Saúde incluiu uma revisão sistemática da literatura publicada nas últimas duas décadas. O principal objetivo foi avaliar o acesso, utilização e qualidade dos cuidados de saúde recebidos pela população migrante durante a gravidez e no período pós-parto, com ênfase especial na forma como esta assistência interfere com os indicadores e resultados de saúde materna. A literatura científica analisada encontrava-se disponível nas bases de dados MEDLINE e SCOPUS. Efetuou-se uma pesquisa por estudos de base populacional publicados entre 1990 e 2012 e relatórios sobre saúde materna em populações imigrantes. No total, foram recuperados 854 artigos, sendo que 30 publicações preencheram os critérios de inclusão e integraram a avaliação final. Um dos aspetos centrais inerente a este estudo de revisão relaciona-se com a não exclusão de estudos qualitativos por si só,

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uma vez que se admite que estes são essenciais para fornecer indicações e informações sensíveis de extrema relevância a partir da perspetiva dos usuários, que determina a demanda, o acesso e o uso efetivo dos serviços de saúde disponíveis. A maioria dos estudos aponta para um maior perfil de risco na saúde das imigrantes, com um aumento da incidência de comorbidades em algumas populações, acesso reduzido aos serviços de saúde, especialmente em imigrantes ilegais, má comunicação entre as mulheres e os profissionais de saúde, uma menor taxa de intervenções obstétricas, uma maior incidência de morte fetal e morte neonatal precoce, um aumento do risco de morte materna, e uma maior incidência de depressão pós-parto. As incidências variam amplamente entre os diferentes grupos populacionais.

2. Estudo Qualitativo

A literatura mostra que diferenças culturais tendem a afetar não só a utilização de cuidados de saúde, mas também a qualidade percebida dos serviços recebidos. Através de estratégias qualitativas (entrevistas semiestruturadas), o objetivo consistiu em fazer um levantamento das necessidades percebidas e dos desafios culturais que potencialmente influenciam as perceções subjetivas da população imigrante. Estas perceções, por sua vez, são suscetíveis de afetar a procura e adesão aos serviços de saúde, bem como a aceitação efetiva de pareceres clínicos. Pretendeu-se também avaliar as barreiras e facilitadores pré-especificados na literatura sobre acessibilidade e utilização dos cuidados de saúde em populações migrantes, que podem contribuir para afetar negativamente a qualidade assistencial. Um objetivo adicional incluiu ainda a exploração e esclarecimento do papel da migração na saúde: tendências recentes de investigação têm destacado o papel dos determinantes sociais e experiências durante a doença. Neste sentido, torna-se relevante considerar os contextos e as condições em que os imigrantes vivem, a fim de compreender os seus comportamentos de saúde, necessidades e crenças que acompanham a procura dos serviços. Constructos que associam a pobreza, estatuto socioeconómico e educação e os seus respetivos impactos no estado de saúde são fundamentais para a compreensão e desenvolvimento de linhas úteis de pesquisa em saúde pública. Assim, foram recolhidas informações sobre o tempo de permanência no país de acolhimento, estatuto legal (documentação), país de origem, as barreiras linguísticas, as condições económicas e socioculturais, rendimentos, condições de vida e de trabalho, nível de escolaridade e as perceções sobre a qualidade dos cuidados e atenção recebida pelos profissionais de saúde (satisfação dos pacientes), o envolvimento com associações civis e integração social.

Trinta e uma participantes foram recrutadas em associações civis e organizações não-governamentais, onde recebiam apoio social e económico. A amostragem foi intencional, e reuniu-se por um processo de encaminhamento, entre novembro de 2011 e

fevereiro de 2012. Critérios de inclusão pré-especificados incluíram: mulheres grávidas e mães recentes a residir no Porto e respetiva área metropolitana, com disponibilidade e interesse em participar da pesquisa. Todas as mulheres apresentavam um nível socioeconómico baixo: o intuito foi observar se a migração desempenhava um papel de empobrecimento adicional na saúde, em presença de uma baixa condição socioeconómica estável (migração como um determinante social da saúde?). Os resultados mostraram que a desinformação sobre os direitos legais e esclarecimentos inadequados durante consultas médicas frequentemente interagiam com os determinantes sociais, como o baixo nível socioeconómico, desemprego e más condições de vida, prejudicando a qualidade percebida dos cuidados de saúde.

3. Estudo Quantitativo

Um estudo transversal foi planeado para avaliar possíveis diferenças nos cuidados obstétricos (e resultados de saúde materna) entre mulheres imigrantes e nativas, onde a saúde gratuita é declarada como disponível para todos durante a gravidez, independentemente do estatuto legal das mulheres. Outro objetivo deste estudo foi comparar os riscos de stress, baixo suporte social, saúde mental empobrecida e depressão em mulheres migrantes e nativas no período pós-parto.

A inclusão das imigrantes (89 imigrantes incluídas) seguiu a definição e critérios previamente apresentados. Todas as mulheres (277 participantes) foram recrutadas através dos hospitais de referência (Hospital de S. João, Centro Hospitalar de Vila Nova de Gaia e Espinho, Centro Hospitalar do Porto – Maternidade Júlio Dinis e Hospital Pedro Hispano). A aprovação do estudo foi obtida no decorrer de 2011 entre as Comissões Executiva e de Ética de todas as instituições. Em todas as instituições, o Diretor de Serviço de Obstetrícia e Ginecologia foi contactado e envolvido no projeto de pesquisa. A monitorização do consentimento, a adesão e o interesse em participar do estudo foi conseguida através dessa coligação.

Um questionário de autopreenchimento foi aplicado durante as visitas domiciliares previamente agendadas, permitindo a recolha de dados sobre vários tópicos relevantes: condições demográficas e sociais (nível socioeconómico, escolaridade, rendimento, situação de emprego e composição do agregado familiar), estilos de vida e comportamentos de saúde ginecológica, obstétrica e história médica geral, a caracterização dos cuidados pré-natais e da assistência médica pós-parto, sintomas e comorbilidades pré-natais e pós-parto, hábitos de saúde e práticas culturais (quando aplicável) e questões específicas associadas à migração. Alguns indicadores de saúde avançados pelo estudo europeu EURO-PERISTAT também foram considerados, constituindo um meio de identificação e avaliação dos determinantes de saúde pretendidos em migrantes e portuguesas (nucleares,

recomendados e recomendados para futura pesquisa; e.g. indicadores e recomendações de saúde materna e serviços de saúde, incluindo a prevalência de morbilidade materna grave, trauma do períneo e depressão pós-parto, bem como a distribuição de tempo para a primeira consulta pré-natal); variáveis frequentemente associados à gravidez e complicações pós-parto também foram medidas. Adicionalmente, quatro escalas específicas validadas foram aplicadas: Escala de Percepção de Stress (Cohen, Kamarck & Mermelstein, 1983; adaptação e validação portuguesa de Pais Ribeiro, 2009) (1, 2), Escala de Satisfação com o Suporte Social (Pais Ribeiro, 1999) (3), Mental Health Inventory 5 (Veit & Ware, 1983; adaptação e validação portuguesa de Pais Ribeiro, 2001) (4, 5) e Escala de Depressão Pós-parto de Edimburgo (Cox, Holden & Sagovsky, 1987; adaptação e validação portuguesa de Augusto, Kumar, Calheiros, Matos & Figueiredo, 1996, e Areias, Kumar, Barros & Figueiredo, 1996) (6-8) após o parto (seguindo as recomendações definidas pela Direção Geral da Saúde) (9). Dados obstétricos foram complementados e confirmados através das informações da gravidez presentes no livro da grávida, um registo de dados clínicos pré-natais e intraparto que é dado a todas as mulheres grávidas em Portugal. Esta avaliação ocorreu 2-3 meses após o parto, para estabelecer uma relação de continuidade entre os potenciais determinantes e os resultados de saúde observados.

No total, 277 questionários respondidos foram obtidos, 89 por migrantes e 188 por mulheres portuguesas. Os resultados mostram que as mulheres migrantes eram mais propensas a ter a sua primeira consulta de gravidez após as 12 semanas de gestação (27% vs. 14%, p=0,011), ou a ter efetuado menos de três consultas pré-natais (2% vs. 0%, p<0,001) mas não foram encontradas diferenças significativas no número total de consultas ou aulas de preparação para o parto. Infeções urinárias e descolamento prematuro da placenta foram mais comuns em mulheres portuguesas. As mulheres migrantes eram mais propensas a ter uma cesariana (48% vs. 31%, p=0,023), laceração perineal (48% vs. 12%, p<0,001), e hemorragia pós-parto (33% vs. 12%, p<0,001). Não se encontraram diferenças significativas entre os grupos na prevalência de prematuridade, baixo peso ao nascimento e malformações fetais. As migrantes eram mais propensas a estar insatisfeitas com o atendimento do pessoal administrativo e dos médicos durante a gravidez. Adicionalmente, os dados mostraram que as migrantes mais probabilidade de baixo apoio social (OR=6,118, 95%IC=[1,991; 18,798]), e de desenvolverem depressão pós-parto (OR=6,444, 95%IC=[1,858; 22,344], EPDS>10), mas não para um elevado stress percebido ou funcionamento mental empobrecido após o parto.

As principais conclusões desta investigação incluem:

✓ Algumas populações migrantes estão em maior risco de complicações graves durante a gravidez, por razões que incluem acesso e utilização reduzida de serviços de saúde, bem como de assistência de menor qualidade, resultando numa maior incidência de resultados de saúde adversos.

✓ Há uma necessidade de mudar o foco da acessibilidade das mulheres imigrantes aos cuidados de saúde, que parece ser, em grande parte garantida em Portugal, para o assegurar a qualidade do atendimento. No entanto, essa mudança de foco deve ser realizada com precaução, considerando-se as mudanças sociais em curso na Europa, num contexto de crise económica (em alguns países o acesso dos migrantes à saúde foi, neste percurso, uma realidade perdida, tornando-se muito importante avaliar a aplicabilidade deste conceito). Especial atenção deve ser prestada às populações mais vulneráveis, a fim de melhorar a saúde.

✓ Os dados sugerem que a saúde depende não só da acessibilidade, mas especialmente das oportunidades sociais. Uma ação equitativa de saúde pública deve proporcionar aos indivíduos e grupos a igualdade de oportunidades para satisfazer as suas necessidades, que pode não ser alcançada através do fornecimento do mesmo tratamento padrão para todos.

✓ Mesmo com cuidados de saúde tendencialmente gratuitos durante a gravidez, as mulheres imigrantes são mais propensas a vigilância pré-natal tardia ou ausente. Têm uma maior taxa de cesarianas e complicações intraparto. O desconhecimento sobre alguns aspetos e diferenças culturais e a comunicação insatisfatória com a equipa de saúde podem desempenhar um papel importante nestes resultados.

✓ À medida a que experiências socioeconómicas individuais e subjetivas estão a atingir maiores impactos na saúde, esses fatores devem ser urgentemente integrados nos cuidados médicos, a fim de restabelecer a justiça social.

Palavras-chave: migração, gravidez e pós-parto, saúde materna determinantes sociais de saúde, equidade.

INTRODUCTION

INTRODUCTION

Migration trends represent compelling development opportunities for the European Union against demographic aging (declining birth rates among indigenous women, being the migrants who contribute to the maintenance of fecundity rates, fertility and births). Migrants meet specific needs of the market labour, essential for sustaining the structural soundness of Europe, as well as continued economic and socio-cultural development (10-12).

One of the most noble challenges affected by migration relates to the provision of universal and equitable healthcare, central accessibility and quality of services, regardless of gender, ethnicity or country of origin – health as a universal right (13, 14). Health and accessibility to healthcare are keystones for social inclusion of immigrants, consisting one of the primary routes of access to citizenship and civil rights (10, 11, 15, 16).

Portugal has shown strong commitment on improving the migrants' integration through a series of inclusive policies, favouring legalization and family reunification, presenting a framework of free access to health care (16-18). Nevertheless there are undeniable weaknesses in investigating these areas, as development of national research, comparative health indicators and strategies for concerted action in this area are needed (17).

The most recent waves of immigration, despite recent changes of trends in directions regarding the destination countries, unanimously show the feminization of migration and increasing participation of migrant women in European demography. Scientific evidence shows that immigrant populations have a higher risk of contracting infectious diseases such as tuberculosis, HIV / AIDS and hepatitis, as well as acute and chronic diseases, such as cardiovascular disease, diabetes and showing higher mortality associated to cancer when compared with indigenous populations (19). They also exhibit a greater risk of suffering from mental illness, including depression, schizophrenia and post-traumatic stress, as a result of specific psychosocial determinants (20). These factors induce and cause an ascending vulnerability during pregnancy (psychopathological complications after delivery – e.g. postpartum blues, psychosis and depression (20, 21) – exacerbated by stressors associated with the migration process). In addition, European lines of research indicate that the morbidity associated with pregnancy, as well as some sexual and reproductive complications tend to be higher among immigrants. There is also evidence that the outcomes of pregnancy tend to be impoverished (losses shown in general state of health, with significant weight to public health), particularly the greater incidence of preterm and low birth weight babies(22). This population also has the worst health indicators associated with higher maternal, neonatal and infant mortality, spontaneous abortion, increased incidence of postpartum depression, negligible gynaecological follow-up and poor prenatal education(23). Thus, maternal and child healthcare should be handled with particular attention (17, 22, 24). World

Health Organization alerts to the urgency in attempting to improve healthcare and social attention to vulnerable populations (e.g. women, migrants, children), especially in times of global economic crisis, where health impoverishment and inequalities tend to be more strongly exacerbated (25).

According to WHO, investment and action on social determinants of health is the most effective way to improve the health of populations by reducing social inequities. Social determinants of health include the social structural factors reflected in social stratification, the mechanisms of resources redistribution, education, the basic conditions of life and work, the existence of social support networks and the availability and accessibility to health services (17). These theoretical dissimilarities are particularly serious, as revised, when associated with pregnancy condition, through the biological and inherent psychological surroundings constituting a greater risk, increasing the vulnerability of immigrant pregnant women, their children and their families.

Within this research, the leading purpose was to measure and comprehend several clinical and social determinants of health, interacting prenatally and postpartum, and how do these specific determinants of women's health relate with their access, use and quality of care during these periods. Special attention was devoted to evaluate and review the access, use and quality of healthcare in migrant population during pregnancy and postpartum period, with particular emphasis on how this interfered with maternal health indicators or outcomes. Additionally, the perception of immigrant women regarding the access, use and quality of care during pregnancy and early motherhood was assessed. Still regarding women's perceptions, latter it was attempted to verify whether there were differences considering quality and appropriateness of care received between immigrant and native women (during pregnancy and postpartum). Furthermore, when concerning actual literature discussion about the impact of Migration in health, the aim was to enlighten its role as a social determinant of maternal health, as well as the impact of other social determinants (e.g. income, education level) in health status of migrant and home-grown women, by evaluating possible differences in obstetrical care (and outcomes). Finally, it was sought to examine if being a migrant increased the frequency of perceived stress, depression, impoverished mental functioning and perceived low social support at postpartum, even when adjusting for other variables of interest.

The present document is organised in five chapters. The first one gathers the state of the art, and is subdivided into three major sections, according to distinctive areas: (1) migrations, (2) the concept of health over the years, and (3) pregnancy and maternity. In the first section - Migrations – several concepts, definitions and trends were presented, with special consideration for those conveyed by the World Health Organization (WHO); a

characterization of the increasing feminine migration at a national level in the last years was also pursued, as well as to establish the migration flows at a local level; this section ends with a discussion and further liaison of the health field as a proxy for measuring migrants' integration in a host country. The second section - Health, the evolution of the concept – addresses firstly some brief standpoints grouped in order to set the limits for the theoretical orientation that was sought for the research and manuscript towards the concept of Health discussed here: an epistemological structural interface between epidemiology, social epidemiology and public health. The perspective of social determinants of health was explored subsequently, its evolution and presence in different moments of Public Health history. It also considers several concepts directly linked with social justice: health status and inequalities among migrants, and accessibility, utilization and quality of health services for migrants (the concept of Equity). The chapter ends with the last section – Pregnancy and Maternity – that engages with a clinical and medical perspective, carrying an objective characterization regarding prenatal care, frequent complications during pregnancy and postpartum problems as well as some sources of vulnerability in pregnancy and motherhood in the context of migration. Lastly, a connection was established between the necessity and relevance of this research from recent European recommendations in this area, and the project EURO-PERISTAT was presented briefly to contextualize some options made considering the investigation of specific maternal health indicators.

The second Chapter presents the aims of this investigation, stating a defined research question and five specific objectives to its accomplishment.

Methodological paths are explained in the Chapter III. This chapter includes a reflexive perspective of all methodological options along the three studies conducted. Here it is explained why and what were the criteria for choosing a mixed methodology approach for a public health perspective to the subject(s) under study. A short revision of the triangulation concept used and its advantages were conveyed. All studies – Systematic Revision, Qualitative Study and Quantitative Study - are described in detail regarding each methodological options and criteria, sampling, instruments (when applicable) and procedures and data analysis.

Main results can be found in Chapter IV in the format of five scientific papers. Each article attempted to respond to one of the objectives set in the Chapter II. All scientific papers were submitted to international peer-reviewed journals with impact factor (ISI Web of Knowledge): I. Maternal healthcare in Migrants: a Systematic Review (published in Maternal and Child Health Journal); II. Migration and Women's Perceptions of Healthcare during Pregnancy and Early Maternity: Addressing the Social Determinants of Health (published in Journal of Immigrant and Minority Health); III. Assessing Maternal Healthcare Inequities Among Migrants: a Qualitative Study (published in Cadernos de Saúde Pública | Reports in

Public Health); IV. Obstetrical care in a migrant population with free access to healthcare (preliminary accepted in International Journal of Gynaecology and Obstetrics); and V. The impact of migration on women's mental health in the postpartum (submitted to Archives of Women's Mental Health).

The final chapter undertakes a summary of the research findings by revisiting some of the most recent papers, perspectives and arguments of this thesis' central themes. These are not meant to be conclusive statements, but offer a more personal point of view, fully supported in key recent scientific documents and authors. Strengths and limitations of the three studies were also considered under this chapter, in a form of a general discussion that also includes an articulation between studies and their respective findings and conclusions, completing the process of interpretative data triangulation.

CHAPTER I – STATE OF ART

1. Migrations

1.1. Concepts and Trends

Human migration is an ancient phenomenon literally defined by human physical movements from one area, region or country to another, either temporarily or permanently. In the developing of this thesis, the definition proposed by the World Health Organization was accepted, which defines migrants as "persons residing outside their country of birth". In 2010, migrants constituted 8.4% of the population of all Member States of the WHO European Region (74.5 million people) which were 39% of all migrants worldwide (26) (internal migrants and irregular migrants are not included in these statistics).

Within the last century, the speed of migration has been facilitated by improved media, transportation and communication techniques (27), and in 2010, migrants were estimated to number 213 million worldwide (3.5% of the World population) (28). Due to mobility caused by societies' development, *international migrants* maintain close relationships with family members who remain in their countries of origin, giving rise to what is known nowadays as transnational migration. Transnationalism is a term used to refer to the development of "networks, activities, lifestyles and ideologies" covering the societies of origin and arrival of immigrants (29, 30).

Migration can be seen as an on-going process of social change whereby a person moves from one cultural context to another and settles down either for a lengthy period or permanently (31, 32), underscoring the influence of biological, environmental, economic, social, cultural and health factors.

Despite the term migration has a clear definition (33), no universally agreement upon operational definition currently exists (16, 34). Several terms for migrants have been used in the scientific literature and in society in general: migrants, emigrants, immigrants, settlers, guest workers, refugees, ethnic minorities, minority groups, ethnic groups and/or persons belonging to another ethnic background (35, 36). These terms reflect different historical, political, social, cultural and conceptual perspectives as well as theoretical disciplinary frameworks (37). Usually, migrants are categorized into four groups: 1) Labour migrants (including students); 2) Refugee (including asylum-seekers): 3) Family reunified migrants; and 4) Undocumented migrants (including human trafficking). These categories are based on type of migration; as type of and reasons to migrate may be a mixture, the categories are artificial (38, 39).

The offspring of "first generation migrants" have been labelled "second generation migrants". Nowadays, migrants' offspring are often called descendants, ethnic minorities, or persons with migration background since there have been strong arguments against use of

this term as it is a misuse of the term 'migration' as the offspring have not migrated themselves (14).

Migration is often divided into voluntary and forced; however, reasons for migration often include both elements (27). In the migration process, a number of stressors may influence migrants' physical and mental health (40) resulting in increased vulnerability. Being a migrant, including a person's ethnicity and race, have potentially important exposure variables in epidemiology and are therefore used to subdivide populations (40, 41).

Urban cultural diversity has gained visibility in the context of exponential globalization, adding constraints and development opportunities. As previously stated, migration trends represent compelling development opportunities for the European Union against demographic aging (declining birth rates among native women, being the migrants that contribute to the maintenance of fecundity rates, fertility and births), meeting specific needs of the market labour, essential for maintaining the structural soundness of Europe, as well as continued economic and socio-cultural development (10-12).

Indeed, the increased mobility of people worldwide simultaneously generates innovation and progress in social, economic and cultural dimensions, but also launches extraordinarily serious challenges to stability and social cohesion. The international migration has become a key issue for most countries in stimulating intense debates about how immigrants can be successfully integrated into corporations and labour markets (10, 13).

One of the challenges is to understand how the growing interactions between very different people can – if encouraged, protected and potentiated – contribute to the construction of a fairer, more inclusive society that dignifies and embodies the Universal Declaration of Human Rights (42, 43).

The act of migration is an experience that can be deceiving, at least for an initial period of staying in the host country. Not all migration paths are painful enough to become traumatic; yet when people tend to immigrate with few resources, in search of better living conditions but without a structured professional or socially grounded project in the host country, the more easily new migrants find themselves in situations of insecurity, social exclusion and vulnerability. Thus, time is not always a friend for undocumented excluded immigrants, and even when in regular documented situations, migration experiences can be harsh and traumatic to an individual and to the members of his family, as they continuously imply social and psychological adaptations to the host culture, frequently the learning of a new language, the adaptation to an unknown and sometimes hostile environment (38, 44).

The transnational approach to migration assumes that immigrants are struggling to integrate into the new society in which they live; they do not necessarily entail a break with their countries and communities of origin. Indeed, transnational migrants make double effort

to integrate into the host society and maintain links with their society of origin (29, 30). Therefore, migration always involves numerous losses and changes; it is a moment of personal reorganization with repercussions affecting the psychic structure of the individual as the acculturation process proceeds. The conditions under which migration takes place, the psychological and social resources of the individual and the characteristics of the society that receives him will also play important roles in determining the type and intensity of anguish that mobilize and build the defenses and personal acculturation that leads to a successful adaptation process. In the host country, immigrants are confronted with numerous (more or less temporary) new realities. At a psychological level, differences in culture, social contexts and physical environments demands rapid functional adaptation; politically, immigrants often find themselves with little or no autonomy and decision power (loss of citizenship as a right). Regarding the economic dimension, employment situations (when accomplished) are frequently suboptimal, with lack of safety conditions and often inadequate to their educational status. In the cultural sector, differences in language, religion and customs usually puts immigrants in a sensitive position between symbolic abandonment of their country of origin and their cultural habits and practices in favor of a more rapid acceptance, acculturation and dilution of themselves in the host society. Also, in a social dimension, isolation and affective deprivation from referral relationships with loved ones position immigrants in an almost chronic route of lack of emotional and social support (15, 45, 46).

Definitions shall apply vulnerability to a state of lower resistance to adversity and aggression that may be permanent or temporary, immediate or deferred, widespread or limited to a particular sector and that implies the existence of risk factors. The more exposed to risk factors, higher the vulnerability. Immigrant particular characteristics and conditions brought up situations of great vulnerability, constituting a well-known risk group when concerning mental and physical health. Among the many causes, several stand out: the low socioeconomic status, poor housing conditions and occupation, socio-cultural adjustment problems, isolation and loss of social relationships, attitudes of discrimination and racism, acculturation stress, difficult access and lack of knowledge about the health services' functioning in the area of residence (often leading to self-medication trends), lack of information and difficulties of health professionals in dealing with different ethnic groups, and sometimes lack of preparation and organization of health services to meet the needs of minorities (47, 48).

The reality of European countries is very different, as are different governing laws guiding the acceptance and integration of immigrants, and specific plans that countries outline to frame the phenomenon of immigration. Some countries, since the 60's, opened the doors to immigration – the case of Germany, France and England. Others, like Portugal, which at that time only was characterized as an exporter of human capital, are

currently experiencing a new reality of transition from host countries, opened up to new people, assimilated new cultures and therefore achieved the enormous challenge of managing cultural diversity, to becoming an human exporter again (10).

The Danish Presidency of the European Union, which began in July 2002, clearly scheduled cultural diversity as one of the agenda items for the urban development in the EU. The starting point for this work was the "Multiannual Cooperation Program of Urban Affairs in the European Union" – Report of Lille – discussed and approved at the Informal Meeting of Ministers held in that city in November 2000. A set of nine priority issues highlight the importance of developing and implementing measures to combat social segregation, discrimination and ethnic disadvantaged neighbourhoods and, in this context, the action to promote better integration of ethnic minorities (10, 11, 13, 14).

The latest OECD report on international immigration states that the OECD countries are currently facing an extremely significant period with regard to international migration. Indeed, the aging population conjunction with the regression of birth rates in recent years and consequent decrease in the proportion of young people and adults of working age have been felt in almost all countries, emphasizing increasingly aging indexes. Moreover, and despite an almost general consensus of need to strengthen a more skilled immigration, the shortage of the labour force already manifest also in sectors whose occupations require a low qualifying. The shortage of manpower in sectors like construction, hotels and restaurants, food, agriculture, domestic services, cleaning and personal care was observed in several areas in several countries. Often these jobs are poorly paid and working conditions are not very appeal to the indigenous work force (43, 44, 49).

The same report states that the downward trend of immigration in Portugal registered since 2003 apparently ceased in 2006. The different components of legal immigration totalled more than 42.000 in 2006, an increase of almost 50% over 2005. The biggest increases were observed among immigrants from Eastern Europe, much of which seems to have come to Portugal for reasons of family reunification (feminization of migration flows) (44, 50).

Today most people live in cities and urban areas widened – foreign origin or indigenous – population density in cities are estimated to reach values of around 50% worldwide and 80% at EU level. Therefore, and because it is in cities that people mostly live, is also to cities that new residents arrive. So, it will be in this urban context that success or failure of host and integration processes will occur in the first place, and with greater accuracy. Hence the particular importance resides in if cities are prepared to deal with problems and potentialities that this phenomenon implies. Without devaluing the role that Central Government has in this respect, it is noted that local authorities performs a crucial role on facing the integration of migrants (18, 27, 44).

The European Commission in its 2nd Report on Economic and Social Cohesion stresses the importance of European cities as driving forces of economic growth regions and European Union. On the other hand, given the demographic regression that have been observed in countries that constitute the EU, new residents are unequivocally one of the main routes for the future sustainability of modern society (18, 27, 44).

Urban demographics point that international migration has helped to mitigate the fall in birth rate that most European countries has registrant. Foreigners come to the cities in search of new registrations of life, looking for a larger and diverse range of opportunities: employment, education, health and housing. Cities can become excellent platforms for integration and social cohesion (15, 18, 27).

1.1.1. Feminine Migration

As migration trends have grown increasingly complex, the number of female migrants has also steadily risen. Female migrants now constitute nearly half of all migrants worldwide with an overwhelming majority migrating to developed countries (51-54). Recent data indicates that the proportion of women migrating to Europe has been growing and has become higher than the proportion of men (50). This migration trend is predisposed to reveal a change in women's role: Though female migration may still largely occur due to family reunification and, in some cases, forced migration, more women today are migrating independently to meet their own economic demands. Thus, female migration may potentially be an element of gender equality and an element for modifying gender roles and women's status (54, 55).

Female migrants face different challenges and opportunities than men as they integrate into their host communities and become development agents for both their countries of destination and origin. And for those female migrants who return to their country of origin after several years, empowered and with new perspectives, they may face new social challenges as they have to adjust to their societies and families but can also contribute to the development of their place of origin with their new skills, economic and decision-making power acquired during migration (54, 55).

Female migration has been recognized as an important challenge for public health as increasing evidence indicates that migration can adversely affect the health of migrant women. Differences in host countries' social structure, multiple internal and external barriers that hinder integration, the stress associated with the migration process itself often overexposes women to risk factors that can affect their health status (16, 50, 56).

1.2. Migration flows at a local level: the reality of Porto

Portugal is, like other countries of southern Europe, a country of recent immigration. In a brief historical retrospect, it appears that until the 60's Portugal was a country of predominant emigration. With April 25, 1974 subsequent independent processes initiated by the former colonies result in a massive return of citizens from those territories (foreigners and indigenous) (53).

In the early 80's, this process generates an exponential unusual increase in the number of foreign residents in Portugal, and many citizens of that time with status of "foreign", had previously been Portuguese citizens. The 90´s were characterized by consolidation and growth of the population residing in Portugal especially coming from the PALOP communities and Brazil. At the turn of the century came the first migration flows from Eastern Europe, and a reinforcement growth of the Brazilian community in Portugal. Despite the scarcity of statistical information about this topic to the scale of the region of Porto, it can be said that the foreign population has gained greater importance in recent years (42, 53).

According to the data covering the last two Censuses of Population, in 1991, 3.697 foreigners were living in the municipality of Porto and close to 100.000 in the mainland, values that a decade later, amounted respectively to 4.200 people in the city and 220.840 people in the mainland. In evolutionary terms, it is clear how the presence of immigrants, having grown in both geographical areas, was much more significant at the Portuguese mainland (120%) than at the local level (13.6%). With regard to representation of foreign citizens in society, because of these trajectories, their relative weight has increased significantly in this decade, both in terms of local and national level (17).

Regarding the distribution of foreign population by sex, in 1991, women representativeness was slightly higher than men (52.3%), and in 2001, quotas between immigrant females and males were distributed almost equally (17, 53).

With regard to nationality, foreigners residing in Porto, according to Census 2001, were mostly PALOP (26.4%). The Brazilians were the second largest group, accounting for almost one quarter of all immigrants. Following a dynamic social perspective, it is worth mentioning that in the 90's, in addition to strengthening of African countries of Portuguese speaking, it was noted an increase of citizens from countries belonging to the designated "Other Europe" (whose proportion rose from 4.7% in 1991 to 10.6% in 2001), trend largely explained by the Immigration from Eastern Europe (17, 53). In 2012, 23.440 immigrants were counted in Porto. The most representative nationalities of foreign residents in Portugal were Brazil (25.3%), Ukraine (10.6%), Cape Verde (10.3%), Romania (8.4%) and Angola (4.9%). Guinea-Bissau is assumed as the sixth most representative community (4.3%) (53).

In our last Census (INE, 2011) 394.496 immigrants were living in Portugal, representing about 3.7% of the total population. This shows that in the last decade, the

foreign population increased by about 70% since it was 226.715 in 2001. The largest foreign community residing in Portugal was Brazil, with 109.787 people (about 28%), followed by Cape Verde, with 38.895 (10%). The Ukrainian community was the third most represented in Portugal, with 9%, emerging Angolan in 4th place, with about 7% (in 2001 occupied the first place in the overall foreign population resident in Portugal, with a weight of 16%). Noteworthy is also the increase of the Romanian population and Chinese during the past decade (52).

At district council level there are many elements that allow quantifying the statistical stock of foreign population in the period after 2001. It is only known that at the level of the country, annual growth has been steady. According to data published by the Office of Foreigners and Borders Service (SEF), in 2007, the number of legal foreign residents Portugal had already been exceeded 400.000, a threshold that represents an increase of 80% over the period of 2001 (17).

Analysing the inflow of residents in the county, from requests for authorization residence recorded at SEF is however possible to appreciate what has been the local dynamics for integrating new immigrants, on which most strong growth registered in 2006, the latest year for which data are available. With regard to the origin of the immigrants who took up residence in the city in the latest years, the share was arguably the most significant of Brazilian citizens (17, 53).

The statistical data on immigrants in the city of Porto is still very incomplete regarding the recent developments and omissions with respect to certain dimensions of the problem as is the case of illegal immigration. The truth is that trends at the level of heavy spheres of demography and economy are now unpredictable. Therefore, the aging population and increasing dependence evident in certain segments of the labour market made by immigrant labour allow the anticipation of certain changes in sedentariness of immigrants, leaving the ones that remain in the country in a situation of even greater vulnerability and social deprivation (17).

In this context, Porto and Portugal as a whole, increased their role as recipients of flows international migration until 2009. Although the unquestionably reversal in migration patterns observed so far, the importance of monitoring this dynamic and its impact both in terms of conditions of immigrant populations and host societies is now greater because of the widespread difficulties in the general population, arising from the global economic crisis deepens the previously existing vulnerabilities in migrants.

According to data released by Eurostat for the Urban Design Auditorium, Porto presented in 2001, a rate of 1.6% of total foreign individuals of the national population, stood on the lot of urban centres with the lowest proportion of citizens from other countries, corresponding to the 213th position in the set of 312 European cities, with information

available to date and who participated in this initiative European dissemination of urban compared statistics (17).

While admitting that the presence of migrants in Porto has been increasing, the truth is that, from a quantitative standpoint, the contours of current situation are not accurately known. The official statistical data are relatively scarce in relation to the information provided by the INE and somewhat outdated data. However, the work of local Urban Planning for the Integration of Immigrants (57), supported by the Observatory of Immigration (OI) in partnership with the Foundation for Science and Technology (FCT), must be emphasized.

Based on the relevance of the concept of integration, primarily made at a local level, the Municipal Department of Studies (GEP) decided to start a new work line with the intention of deepening the knowledge about this reality, in order to prevent the phenomena of discrimination and social exclusion, demanding to pro-actively transform this new reality in effective opportunity. These concerns led the City Council, in June 2005, to create the Municipal Council of Communities – "an advisory body in which participate organizations and civic associations representing foreign communities domiciled and / or stable and significantly actives in the city of Porto, with the defined goal of creating conditions for a permanent dialogue between the municipality and the immigrants and foreigners who have settled there. This device theoretically allows the community to gather knowledge about migrants' concerns, perspectives and ideas, aiming to improve their quality of life (17, 57).

As stated earlier, the process of globalization and increased immigration definitely placed the issues of social cohesion and cultural diversity in urban current agenda of all countries. The phenomenon of immigration still lacks monitoring and the mindfulness of the multiple dimensions involved in order to technically sustain the design of policies and support the processes of decision making towards the universal warranty of a whole citizenship.

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1.3.   Health: a keystone to integration

Health and accessibility to healthcare are keystones for social inclusion of immigrants, consisting one of the primary routes of access to citizenship and civil rights (14-17, 45, 46, 49). One of the most noble challenges stricken by migration phenomena relates to the provision of universal and equitable healthcare, accessibility and quality of services provided, irrespective of gender, ethnicity or country of origin – health as a universal right (13, 14).

Portugal has shown strong commitment on improving the immigrants' integration through a series of inclusive policies, favouring the legalization and acquisition of dual citizenship (when enabled by the country of origin) and family reunification, presenting a remarkably inclusive law considering the European Union level of integration policies, in particular regarding free access to healthcare (14, 16, 18, 34, 50, 56). Recent studies

conducted in Portugal (Lisbon) denounce very different realities: the majority of migrants' complaints rely on aspects not covered in legislation that facilitate the interpretability of the law by whom receive immigrants on accessing services (including administrative workers, or even healthcare professionals, little skilled, with low cultural sensitivity or with lack of expertise about law functioning, which are the first face in the reception of these people, often unaware about healthcare services and personal rights) (34, 50).

According to the Fourth National Health Survey (2005/2006), immigrants have a more favourable health status than the Portuguese (62.8% rate their health as good or very good); immigrants have less propensity for short-term disability, and experience a lower prevalence of chronic diseases (except for asthma) (18). This results must, however, be taken into account considering migrants' sample characteristics, as the National Survey has considered a group of integrated, highly educated, and wealthy immigrants. Other studies with more disadvantaged groups do not show this health profile and such results and trends are found in Portugal and in Europe (16, 40, 45, 50, 56, 58).

Migrants tend to be healthy (e.g. *healthy migrant effect*), as they begin a primary journey of mobility depending foremost on their organic ability for vital integration in the host country through socio-economic opportunities as a path of inclusion in professional market (45, 46, 56).

However, the assessment of immigrants' health status is crucial given the stressful nature of the migration process, which threatens people's health and well-being in the several stages that precede the arrival and attachment to the desired country. On the one hand, individuals who arrive in a new country are confronted with new contexts, environments and lifestyles, which tends to accentuate social vulnerability situations (given that these people have no social support networks, and still far from their own sources of family support) (10). Beyond the anxieties inherent to migration, social isolation favours the quality of life and mental health impoverishment (incidence of anxiety disorders, depression, sleep disturbances, that usually lead to serious risk behaviours, overuse of alcohol, drugs and relevant incidence of suicide) during, at least, the first months of stay in the host country (10, 24). Moreover, upon arrival at the destination country, migrants may face biological threats due to unknown pathogens, or find different weather conditions that can affect their immune system (10). The most common scenario is often associated to the possibility of unconsciously carrying some infectious diseases or health conditions that may endanger their health or the health of others (for example, concerning the lack of vaccination for relevant diseases in host country, which were not at home; also noted are reproductive health and pregnancy conditions, harmless if detected early, which result in higher rates of miscarriage, bleeding and eclampsia, potentially dangerous for the woman and foetus). Therefore, migrants are frequently overexposed to biological and psychosocial risks (10, 13).

The context worsens when we consider the specific and frequent situations of extreme fragility, such as forced migration, generalized insecurity associated to refugees and asylum seekers, human trafficking, irregular status and the tendency to integrate low income employment with scarce security conditions (resulting in more work-related accidents) (59). The issue of vulnerability acquires more alarming contours when one considers, with regard to healthcare, that there may be barriers (economic and non-financial ones) that hinder access of this population to the national health system (despite the theoretically free and open to all NHS), highlighting language, mobility, legal status, length of stay, country of origin, healthcare provider's attitudes and culture besides occupational factors (56, 60).

Thus, from law to practice (as shown), there is a series of gaps that compete to systematically worsen health indicators of immigrant population, compared to the natives. These facts become particularly unequivocal in relation to certain diseases and conditions (mandatory communicable diseases), such as tuberculosis, hepatitis, HIV, sexual transmitted diseases and some infections (for which the clinical attention and treatment received falls far too short from the necessary). A similar pattern is observed with non-communicable ones (hypertension, diabetes, cardiovascular diseases, stroke, among others), and translates one of the most serious aspects of the social disintegration by lack of demand for early and timely healthcare (22, 24, 59).

When comparing the Portuguese native reality of the mentioned diseases with the reality of immigrants living in Portugal, we observe that numbers tend to replicate European trends: communicable diseases have much superior incidence in migrant population (however, there is clear need to carry out more studies in this area, particularly to guarantee qualitative and quantitative data and results) (22, 24).

Despite the efforts of national inclusive character, omissions on laws tend to affect other relevant aspects beyond healthcare accessibility, namely through legalization paths that are full of bureaucracy and paperwork (compromising access to education and labour market, that often drag down migrants to a pernicious journey of exclusion and illegality of which they can hardly go out because of its inherent condition of vulnerability and lack of social support (45, 46).

It can be pointed out that a key aspect of integration and acceptance lies, above all, on supplying accessibility to make informed decisions (that implies the availability of multilingual information in different contexts, and ideally providing multicultural mediators, trained to be sensitive and attentive to diversity and cultural specificity), to allow constructed knowledge of legislation and civil rights, and especially access to education as the core of developing a full autonomy. Immigrant's self-determination, when provided, leads to the fruition of a new concept of citizenship, adapted to the host country reality, without the loss of

personal and cultural idiosyncrasies. Being ourselves, living intentionally and consciously, is the best way to become healthy citizens, granting an attitude of active and fearless acceptance that enables our equals (regardless the country of origin, ethnicity, gender, sexual ideology) to build the social skills they need to turn themselves into critical full healthy citizens in their new country (46).

2. Health, the evolution of the concept

The Second Revolution in Health brought a new way of understanding health. This perspective was based on the emerging consensual definition of the World Health Organization Assembly, and reflects the multiple dimensions and environments in which human experience takes place (61).

The concept of health concerns, according to the conventions advocated by WHO (1949), a "(...) state of complete well-being, physical, mental and social, and not merely the absence of disease or disability." (61) (p.73). Thus, the state of health can never be understood when isolated from the idiosyncratic assessment that the individual makes about the demands of the environment (internal or external difficulties), as well as the self-valuation about the personal resources to develop an adequate and effective response to it (61, 62). Therefore, health status depends likewise on the sensitivity that individuals have against psychological variables (e.g. personal behaviours, self-concept and perception of control) and environmental variables (likely to generate tension, stress and diseases) (63).

The contemporary construct of health is, as mentioned, associated with the path of a cultural transition from individual to a social health, which implies assuming a collective and multidisciplinary perspective (61, 62).

At this point, it is extremely important to explain that the basic theoretical pillars of this thesis depart from an evolutionary analysis of health, and are grounded in the process of medical approaches evolving. Therefore, this starting written route is guided by conceptual theoretical definitions that also led research protocol held.

Epidemiology

Its widely accepted definition points to a science that studies the distribution of health-related states and its determinants, as well as events in specific populations, and the resulting application to control health problems (64). Epidemiology's main objectives are to firstly identify the aetiology or cause of a disease and its relevant risk factors (e.g. to determine transmission mode and reduce exposures to design preventive interventions), to determine the extension of the disease in the community, to study the natural history and prognosis of the disease (in quantitative terms, that enable statistic comparison of effective models and approaches), "(...)to evaluate both existing and newly developed and therapeutic measures and modes of health care delivery." (p.3)(64), and to provide a framework for developing public policies, grounded in genetic issues and its interactions with environmental problems and characteristics regarding disease prevention and health promotion (64).

Social Epidemiology

Social epidemiology is an extent of epidemiology that seeks the social distribution and social determinants and indicators of health. It focus on specific social phenomenon such as

socio-economic stratification, social networks and support, discrimination, work demands and perceived control that directly impact contextual factors (65), individuals' behaviour, lifestyle as well as determining how each individual experiences life and well-being in an holistic way. Berkman & Kawachi (2000) defined social epidemiology as a branch of epidemiology that studies the social distribution and social-environmental determinants of health: its aim is "(...)to identify socio-environmental exposures that may be related to a broad range of physical and mental health outcomes." (p.6) (66), focusing on specific social phenomena such as socioeconomic status, social networks and support, work conditions and strains (66).

Public Health

Recently, new approaches in Public Health have been recognizing a progressive importance in the analysis of health determinants. Several authors argue that Public Health is crossing crisis, due to the necessary transition of paradigm, associated with a lack of consensus about the new ground model to follow. "What model does the Public Health community want to promote? (...) in face of the paradigm shift, in a rapidly changing society which requires development, recognition and contribution of each and all, from their expertise and capabilities in a coordinated and synergistic effort, supported by policies that ensure infrastructure and opportunities, facilitating choices leading to a better quality of life for all." (p.41)(25). European Public Health Association has reflected about this paradigm shift, defining Public Health as "(…) an organised effort of society to improve the health of a population. (…)New public health defines health as an investment factor for a good community life. It focuses on the behaviour of individuals in their present environment and the conditions of life that influence behaviour. Apart from the classic preventing disease, public health work is about promoting physical and mental health of individuals. This includes influencing living habits and living conditions, but also promoting self-esteem, human dignity and respect." (p.159)(67).

According to WHO, Public Health "refers to all organized measures (whether public or private) to prevent disease, promote health, and prolong life among the population as a whole. Its activities aim to provide conditions in which people can be healthy and focus on entire populations (…), is concerned with the total system and not only the eradication of a particular disease." (68).

In Portugal, the definition actually presented by General Directorate of Health (DGS, through the website of Northern Regional Association of Health, ARSN) accompanied the previously settled tendency, and states Public Health as "(...) the science and art of promoting health (...), based on the understanding that health is a process that involves the well-being, social, mental, spiritual and physical. Public Health intervenes based on the knowledge that health is a fundamental feature of the individual, the community and society

as a whole and must be supported by strong investment in living conditions that create, maintain and protect health." (p.459) (69).

The evolution of health history accompanies the historical classic exploratory theory of health and disease. A review of the contributions of Hippocrates, Miasma Theory in Middle Ages through the Renaissance and to the Industrial Revolution allows the foresight that, in addition to the advances and setbacks due to societal, political and religious changes inherent to different times, it was possible to accumulate a certain transversal knowledge concerning factors associated with the social determination of diseases (70).

The precarious living conditions resulting from unreasonable urbanization and disorderly industrialization provide an increase in transmissible diseases, but also a renewed focus on poverty and adverse social conditions of the working population. In this context it is worth mentioning John Snow. Considered the father of epidemiology, Snow published in 1854 a study on the transmission of cholera, performing an epidemiological survey for the first time and refuting the Miasma Theory. Snow documented the direct relation between the dissemination pattern of the disease and the origin of the epidemic, the public water pump on Broad Street: "any substance that passes from the sick to the healthy and which has the property to grow and multiply in the body of the person." (71).

Additionally, Snow shows exemplarily the notion of vulnerability and transmissibility in the poorest social classes to diseases of this kind, relating them to the living conditions, the precarious housing and employment, as well as behavioural traits from which stemmed practices conducive to cholera propagation (70, 71).

The late nineteenth century is a critical period for epidemiology. Despite the growing validation of their contributions to the understanding of health and disease, a current of thought arises in France by Guérin, conceiving medical practice as based on the analysis of social problems and their relation to disease – Social Medicine. It focuses on measures for health promotion and disease prevention, ultimately linking poverty to illness (bond supported by Villermé studies, that clearly demonstrate an association between economic status and mortality) (72, 73).

During the 20th century, however, the link between health problems and social inequalities remained a neglected topic in research and policy-making. Despite a scientific conjuncture structurally and conceptually divided, with the discovery that diseases are caused by specific etiologic agents, the accumulated knowledge on the social determination of disease sufferers, as explained above, a huge setback (25, 70).

In the early twentieth century, World Wars unleashed successive changes in priorities and standards in society. It reintroduced a climate conducive to (re)thinking in Health (physical, mental) as a collective and social good (in a communitarian perspective), as an

inalienable human right. In 1946, the post-war social framework enabled the founding of the World Health Organization, definitely joining biomedical, technological and social forces. Two years later, the Universal Declaration of Human Rights is proclaimed, setting forth the right to health (explicitly in Article 25 of the Declaration) (25, 70, 74).

Despite, the gap between community and social overtones in health ideology and health practice was felt, since clinical /medical field was still centred in an individualistic approach to people's health, through the necessary model of hospital care (namely in sequence of such a fragile context as the World Wars and the consequent need to give accurate responses to emergent conditions) (25, 70).

In developed countries, since the late 70s, it is observed a reversal epidemiological trend in disease distribution (which peaked in the mid-60s). This transition phenomenon fits the postmodern social evolution (phase of full stability from improved living conditions after the World Wars), which was guided by the global economic growth and, generally, the increasing wealth of western countries. Successive changes were unleashed: in trade and commercial exchanges, allowing social and human capital interchanges (higher mobility, trading and inversion of epidemiological profiles and trends in health, as previously stated), greater access to goods and services (including food and other products that enabled the expansion of various types of consumption, and a profound alteration in lifestyles) (25, 70, 72, 75).

With the passage of the morbidity pattern of acute infectious diseases to chronic diseases and the large swings in the economic situation, successive changes became evident also in organization of services and health care. Advances in medicine have enabled the evolution of social and economic patterns which resulted in health improvements: it allowed an increase in life expectancy, but also, as demonstrated, the change in demographic and epidemiological profiles of the society, increasing the prevalence of a number of chronic diseases (e.g. diabetes, obesity, cardiovascular diseases). It is noteworthy that social development and consequent complexity of the world financial system were translated into new challenges and needs that have led to a diversification of responses by states and better health policies, ideologically appraising disease prevention, health promotion and the primacy of healthcare as a multiple and modifiable concept (25, 72, 75).

Access to better healthcare provides better control of certain risk factors, changes the types of risk factors traditionally associated with certain diseases, as well as exposure and other risk factors still to associate with causal chain of diseases. On the other hand there is a competition between other causes of illness and death that prevent the allocation to a single causative disease (co-morbidities and diseases with complex aetiologies). Recognizing the real benefits of the pharmaceutical industry, medical practice field became more permeable to vertical programs in intervention in specific diseases; pharmaceutical lobbyists have

become a force with growing influence in terms of health policies. In practice, vertical models of intervention in Public Health proliferated, addressing specific diseases, seen as highly efficient, with extremely high cost, and they offer the advantage of presenting easily measurable goals that tended to ignore the social context and its role in the production welfare or disease. This approach revealed itself, through time, as restricted: in addition to the failure in economic terms, vertical programs could not meet the needs of communities. In 1973, Mahler (General Director of WHO) emphasized social inequalities and the non-medical determinants of health as key aspects clearly in deficit in vertical approaches to health intervention (25).

2.1. Determinants of health: State of the art

"The idea that health has social determinants is of course a very old one. It is the axiom on which the disciplines of social medicine and public health were founded in the 19th century (…)" (Ingleby, 2012, p.331)(45)

The factors that influence the individual and collective health are called determinants of health. Continuing the brief historical review of sequential facts will be relevant in order to comprehend the robust placement of social determinants of health in the Public Health field. As regards Social Medicine, its aim is most commonly addressed today by Public Health efforts to understand what are known as social determinants of health, seeking to understand how social and economic conditions impact health, disease and the practice of medicine, as well as to foster conditions in which this understanding can lead to a healthier society (76-78).

Since 1974, within the publication of the Report of Marc Lalonde, Canada Minister of Health, health and disease were formally considered as a result of an interaction between four key influences, with similar value and impact in health: human biology, environment, lifestyle and organization of health services available. For the first time, health is explicitly linked in a governmental document as a matter of economic and social justice (79). In 1978, under the auspices of WHO and UNICEF, Declaration of Alma-Ata was approved in Kazakhstan, attaching not only particular importance to proximity in healthcare (primary healthcare), but stressing the need for investment in social, economic and political causes of the diseases (25). Moreover, health is foreseen not as a goal in itself but rather as a resource that should be available to everyone for the progressive development of communities.

The International Conference on Health Promotion, in 1986, was a result of the global expectations for an efficient public health, focusing on the special needs of industrialized countries, and extending this requirement to other countries (Ottawa Charter). Following the progress for Primary Health Care after the Declaration of Alma-Ata, the WHO document "Targets for Health for All" and the debate occurred at the World Health Assembly on

necessary intersectorial action, the Ottawa Charter establishes important factors to the achievement of health for everyone. The Ottawa Charter defines clear strategies for investment in health, contemplating its multiple factors: public health policies; healthy environment; reorientation of health services and network construction; personal and social skills and responsibilities, building partnerships for enact community participation(80). From the Ottawa Charter, social policies came to be seen as responsible for changing patterns and lifestyles, and economic policies were driven to consider the health threats associated with industrial and technological changes (25).

As the concept of health starts to be considered by WHO as the people's ability to develop their own potential and respond positively to the demands of the environment, health is also seen as an essential component of economic development. The program "Health 21" (81) brought the objective of reducing the disease with increasing health potential through the notion of equity in healthcare provided to the population, environmental safety and community partnerships for operationalizing these goals (25).

In 2000 UN presented the Millennium Declaration, in which States assume co-responsibility in ensuring the defence of the principles of human dignity, equality and equity, with particular attention to the most vulnerable populations (children in particular). The Development Objectives of the Millennium were adopted by 189 countries and established priority lines as economic development and the eradication of poverty (understood as deprivation or lack of access to the means by which individuals can fully realize their potential) (25, 82, 83).

Social determinants of health progressively became a well identified reality that produces gross inequalities in health, threatening social justice and the full accomplishment of the Declaration of Human Rights. In 2005, WHO finally stated officially that social determinants are relevant to both communicable and non-communicable diseases, and should be a concern to policy makers in every sector since they constitute a global challenge (84). The Commission on Social Determinants of Health was created to review the evidence, raise societal debate and to support countries to address the social factors that negatively influence health and are responsible for inequalities and inequities by recommending policies for improving health for the vulnerable – political approach towards action! (43).

Under the chair of Sir Michael Marmot, the CSDH have been studying, analysing and clarifying several issues around social relations and factors that influence health and health systems, evidencing the costs of not acting on those social dimensions, and establishing detailed action plans for successful and wide interventions. CSDH argues that health equity is an issue for all countries and is significantly affected by global economy and political systems. Its major sets to the proposed path pointed for countries is to promote equality in

health (towards equity in healthcare) through a global movement, obtaining collaboration worldwide for policy development (formation of regional organizations, called Enabling Civil Society), unique combination of political and academic experiences and advocacy in behalf of a holistic perspective and global responsibility towards social determinants of health (85).

Social Determinants of Health

"*Social injustice is killing people on a grand scale.*" (Marmot, 2011, p.74). (85)

Figure 1. Health Determinants
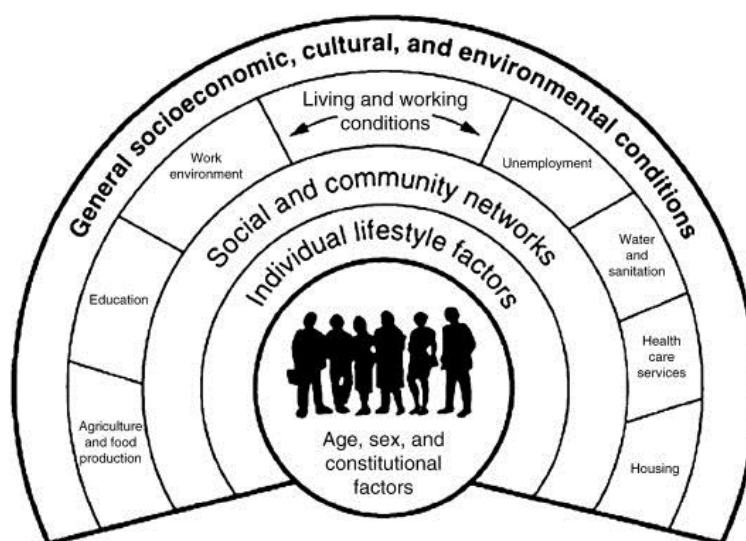
(Dahlgren & Whitehead, 1991)(25, 83)

The factors that influence the individual and collective health are called determinants of health. Genetic, psychological and other personal factors, characteristics of the environments in which people live should be considered (e.g. household, family, school, employment and work conditions, health services and facilities). The social determinants of health are related to social justice and to the exercise of human rights. Its background frame is based on a holistic and salutary approach to health, materialized in social conditions in which people live and work, that potentially determine their ability to access and use goods and services to fully satisfy their needs. All factors interact and are individually processed at a neurologic level, producing reactive physiological responses to environment: welfare, morbidity or mortality (85-88).

In a recent referential report on the subject, "Fair Society, Healthy Lives (The Marmot Review)", Sir Marmot describes a meticulous framing of CSDH schemes of action on the social determinants of health, detailing each one of them (89). In this document and other work papers of his research team (Institute of Health Equity, Research Department of Epidemiology and Public Health, University College London), the perspective conveyed by

this group of authors and researchers defends that the impoverished health of the poor, the social gradient in health within countries and deep inequalities between countries are caused by the unequal distribution of power, income, goods and services (e.g. literacy and education) in a national and global scale. Consequently, an endogamic social injustice is produced, visible in immediate circumstances of the population in access to healthcare, schools and education, their working and recreational conditions, in their homes, communities and cities – ultimately, in their opportunities to enjoy a prosperous life (43, 85-89).

Five areas are taken as particularly determinant in shaping health and health inequalities, thus urgent to intervene in. The early years of a child and its *first experiences in early infancy* constitutes a foundation for the whole development through lifespan. Physical, social, and cognitive development is highly determined by the psychosocial and economic environment that surrounds pregnancy, influencing maternal health, family wellbeing and, in the end of the line, child's health status (e.g. school-readiness and educational attainment, health knowledge and responsibility). Maternal environmental during pregnancy influences the development of the foetus and the offspring's health, as literature on foetal programming and development effects, since Barker hypothesis, attributes a profound importance to the life in the womb: in-uterus environment as the stage for adult health and wellbeing. The original proposal of Barker (1998) sets that foetal under-nutrition (when human foetuses have to adapt to a limited supply of nutrients) permanently changes the organism's body structure, physiology and metabolism, and that these "programmed" changes may lead to several diseases in later life (e.g. coronary heart disease and stroke, hypertension and diabetes) (89, 90). Low birth weight in particular is associated with poorer long-term health and educational outcomes (90-92), and the evidence also suggests that maternal health is related to socioeconomic status (90, 93).

Socially graded inequalities present prenatally tend to increase through early childhood. Maternal health, including stress, diet, drug, alcohol and tobacco use during pregnancy, has significant influence on foetal and early brain development (89). The evidence for an association between maternal stress, depression and anxiety in pregnancy and an adverse neurodevelopmental outcome for the child is substantial, and its interaction with other influences associated with social position enhances its hazard effects (e.g. compromising educational success, emotional and social skills, mental and physical health)(87, 89, 90). Therefore, disadvantaged groups in higher risk of such vulnerability to lower social gradients, gaps and stress include young people, the uneducated, ethnic minorities and migrants (85, 94). This dramatic association tends to replicate itself as acquisition of cognitive skills is strongly associated with better outcomes across the life course over a range of domains including employment, income and health (89).

Educational opportunities and their respective impact in health do not establish a linear pathway of expression. Educational outcomes often depend on several factors such as socio-demographic background (family income, parental education), the quality of familial environment and relationships, school-peer factors and children's individual characteristics. These predictors' mutual interaction reflects in the subsequent attainment of children and young people in school and the degree of their involvement and motivation with academic matters. Besides parental socioeconomic position, children's personal characteristics such as perseverance, motivation, use of time, self-esteem, self-control and preferences for leisure have direct effects on school achievement, later employment and income, involvement in crime and other aspects of social and economic life, including health outcomes and behaviours. However, non-cognitive personal characteristics also depend on the family factors and developmental experiences provided to children, all influenced by parents' socioeconomic position (85, 88-90). There are significant differences in socioeconomic deprivation and school realization according to gender and ethnicity. These differences emerge in early childhood and tend to increase as children get older. Regarding the impact of educational level and academic accomplishment in health, several cohort studies showed that, across time, higher educational attainment is associated with healthier behaviour (88, 95). Highly educated were shown not only to be more likely to be in full-time employment than those with lower educational attainment, but also less likely to smoke and be over-weight and more likely to exercise regularly and eat healthily (89).

"The relationship between *employment* and health is close, enduring and multi-dimensional." (p.68)(89). The individual processes required for the integration skills of a competitive management of uncertainty, an essential feature to actual employment condition in a globalizing world, requires a permanent cognitive differentiation that is not transversal to the whole population. The social changes in a global scale particularly manifest in the field of employment, result in an inevitable deepening of social differences and exclusion of disadvantaged minorities (as a consequence, perpetuation of "the excluded underclass"; polarization of hand labour and workers, and consequent phenomenon of structural unemployment). Several people stay trapped in a cycle of low-paid, poor quality work and unemployment, since those are unequally distributed across society. The unequal distribution of resources and social power tends to accentuate and dramatize situations where vulnerabilities have pre-existed, so "less equipped" people tendentiously are endowed with a lower ability to positively manage uncertainty, submerging in situations of social exclusion (89, 96).

Both empirical knowledge and scientific literature point to higher rates of unemployment among those with no or few qualifications and skills, people with disabilities and mental illness, those with caring responsibilities, ethnic minority groups, older workers

and, in particular, young people. These same groups are more likely to be, when employed, in low-paid, poor quality jobs, often working in harmful conditions (86, 88, 89). Insecure occupational conditions and low quality jobs are associated with increased health risks, in particular musculoskeletal and mental disorders (that can compulsively lead to unhealthy lifestyles and uncompromised health behaviours) (86, 89).

Being without work is rarely good for one's health, as unemployed people incur a multiplicity of elevated health risks: increased rates of limiting long-term illness, mental illness and cardiovascular disease, in addition to the devastating effects on psychological well-being, which consistently associates the experience of unemployment with suicide and overall higher risks of mortality. Unemployed people also manifest a much higher use of medication, worse prognosis and recovery rates. The pernicious effect of unemployment in impoverished health resides in their mutually reinforced relation: the longer a person is unemployed, higher the risk of subsequent illness, and thereby further reduced likelihood of returning to employment. On the contrary, good work conditions are linked to positive health outcomes. However, not all work favours health: the issue of uncertainty and insecurity, low-paid and sub-optimal work conditions fail to protect employees from stress and danger, and tend to equally destroy people's wellbeing. People's health can be damaged at work by factors that include exposure to physical hazards, physically demanding or dangerous work, long or irregular working hours without adequate resting periods, shift work, health-adverse postures or sedentary work. Toxic combinations of these factors are prominent among the most deprived (88, 89, 96).

Regarding the working condition, previously described, *income* and remuneration were considered. Low income directly affects people in using goods and services (including healthcare facilities and expensive treatments or medication), determining potential acquisition of cheaper and hazardous food products, and hampering an active social participation. Health-adverse effects of having low income have been shown in several studies, but the relation is graded and not confined to those on the lowest incomes since the whole inequality in income is proved to be harmful: communities and areas within countries, marked by greater inequality have worse health but also worse social cohesion, which results in worsen life opportunities and health outcomes (higher rate of crime and other adverse social outcomes) (86, 89).

Health in community level and *living environment* can also be affected by climate changes and hazardous exposures (e.g. weather conditions, heat waves, floods and storms including health hazards from chemical and sewage pollution), especially pernicious among the most vulnerable and deprived. Among the insidious effects and its impact in health are cataracts, respiratory problems and skin cancer. A longer-term impact is becoming noticeable with effects on mental health of flooding and other climate-related catastrophes,

which cause anxiety and depression. Climate changes are also demonstrating impact (in some communities more than others) in food availability and safety, as well as in several conditions and lifestyles than can indirectly be responsible for unhealthy behaviours and health conditions impoverishment: increasing chronic diseases (e.g. diabetes, obesity) and carbon footprint (86, 89).

Still concerning environment issues, special attention must be provided to air pollution, as the adverse effects of outdoor air pollution play relevant role for cardio-respiratory mortality and morbidity. Numerous studies point to the direct benefits of living near green space facilities to both physical and mental health and wellbeing. Green spaces have been associated with a decrease in health complaints blood pressure and cholesterol, improved mental health and reduced stress levels (97), perceived better general health (98) and the ability to face problems (99). Indirectly, green spaces tend to improve social contact as well as physical activity, play and integration and improves the quality of air, reducing climate changing effects and respective impact at population level (89).

Household and surroundings are also permeable to social gradient. The logic of poverty segregation contributed to the proliferation of deprived neighbourhoods, with social and environmental characteristics presenting risks to health: poor housing, higher rates of crime, poorer air quality, lack of green spaces and places for children to play, and more traffic. The quality of housing is important to health. A cross-country tendency shows that poverty expresses itself in overcrowding and social housing, but overall bad housing conditions include temporary accommodation, overcrowding, insecurity, and housing in poor physical conditions. Thematic studies are unanimous in identifying higher health risks in children living in bad household conditions and deprived neighbourhoods: they are more likely to have mental health problems (e.g. anxiety and depression), to contract meningitis, to have respiratory problems, to experience long-term ill health and disability as well as slow physical growth and to have delayed cognitive development (86, 89).

Transportation network also constitutes a benchmarking of community welfare. Transport enables access to work, education, social networks and services that can improve people's opportunities, offering greater mobility and freedom to travel, but also consuming fuel and contributing to the environment pollution. Nevertheless, the impact of transport on health inequalities is most significant when looking at deaths from road traffic injuries (especially relevant among unemployed people and children living in deprived neighbourhoods) (86, 89).

Researchers in this area still postulate that this unequal distribution of experiences potentially hazardous to health is not, in any way, a "natural" phenomenon, but rather the result of a toxic combination of social policies and feeble public health programs, unjust

economic structures and policies of low quality. Social inequities are not only determined by the social circumstances, social stratification and position. Social and institutional macroeconomic contexts, the set of values applied by society and unequal public policies are fundamental factors in the immersion of social inequities. Together, the structural determinants and daily life conditions constitute the social determinants of health and are responsible for most health inequalities within and between countries. People and groups that are further down the social scale are at twice risk of serious illness or premature death. The socio-material and psychological causes contribute to this hazard and its effects extend to almost all diseases. Social disadvantages can manifest in relative or absolute terms, and the tendency is to be concentrated on the same social groups, with cumulative effects throughout the life course (25, 43, 87, 100).

Therefore, several recent criticisms have been woven towards the omission of migration and ethnicity among CSDH reports. In fact, numerous specialist researchers have been claiming that CSDH, WHO and European Research Framework Programmes are taking the social determinants of health in a one-dimensional harmful approach: closing and subverting them to a reductionist concept of socio-economic determinants (45, 46). Professor David Ingleby (2012) has analysed some of the referred Programmes and Agendas to conclude that numerous relevant topics regarding social inequalities were only slightly mentioned (e.g. gender, sexual orientation, age, ethnicity (and migration status), disability and geography), lacking coherent reflection and structured intervention strategies. The relegation of these factors to the background is already showing some consequences as "(…) a coherent view on the complex genesis of social inequalities is sacrificed to the goal of highlighting the correlation between health and a single variable, SES." (45) (p.332). There was no serious discussion of the effects of migrant status and ethnicity on health. Furthermore, this omission will probably continue to perpetuate itself in terms of effects in this research area, in a so-called action of "scientific marginalization", as the European research programs have begun to penalize the research work among migration and ethnicity (45). There seems to be a shortage in European society in recognizing that social stratification is intimately linked to ethnic diversity. Additionally, there is a tendency of some epidemiologists to explain away ethnic differences in terms of SES that failed to consider interactions between individual, social and cultural factors, also failing in producing a coherent and useful vision on ethnic disadvantage. They usually take refuge in elementary statistical fallacies claiming that many effects of migration or ethnicity disappear or are reduced to insignificance when SES is controlled for, not seeing them as structural determinants of inequalities: SES is often considered a confounder in the relation of ethnicity and health, and the possible causal path is scarcely taken into account; "(…)in other words,

that being a migrant or a member of an ethnic minority leads to ill-health by lowering one's socioeconomic status." (45)(p.337).

Thereby, it is relevant to state that understanding the role of migration and ethnicity in generating and maintaining social stratification is essential to tackle social inequalities in health. The strategy of tackle and monitor SES alone as the most generalised form of inequity and to deal with the other factors later is to ignore the fact that different forms of inequity are interconnected and are mutually reinforced (45). Thus, further multidisciplinary and multi-method research is very much needed.

2.2. Health status and inequalities among migrants

All individuals at different times of life are potentially at risk of compromising physical, psychological and social dimensions of health. Some may see this risk increased due to lack of material and non-material resources to deal with ill health – definition of vulnerability. Social determinants of health are frequently linked with such vulnerability, producing several inequalities in health outcomes: poverty, education, employment, and micro/macro environmental factors (25, 43, 87).

There are numerous health inequities worldwide and several studies have shown differences in health status between population groups on all continents, between countries, between regions within countries, between cities, between neighbourhoods within cities, and all seem to reflect concordant results: higher mortality rate, lower life expectancy, and more disability at younger ages, most morbidity of population segments with lower income, with lower educational level or residing in deprived residential areas. These particularly disadvantaged groups can be resumed as: homeless, refugees and asylum seekers, migrant women and children. These inequalities interact in complex ways with socioeconomic position in shaping people's health status (25, 85, 89, 94).

Migration in Europe today involves a diverse group of people. As previously seen, most migrants are healthy young people that travel by free will, searching for employment opportunities in order to improve life conditions and family welfare; several studies show that migrants often benefit from a so-called "healthy migrant effect" when they first arrive in their host community. In addition to considering health profiles, cultural health habits, behaviours and vulnerabilities in countries of origin and destination, the process of mobility itself has influences that can affect health outcomes. Conditions surrounding the migration process can increase vulnerability to ill health: through displacement, people lose social support network, internal and external references of security and frequently have to deal with stressful periods of non-citizenship where their rights may be under-protected and their basic needs unfilled. This is particularly true for people who migrate involuntarily, flee due to

natural or man-made disasters and in clear situations of human rights violations (victims of human trafficking, asylum seekers, refugees, displaced persons and returnees); and for those who find themselves in an irregular situation, such as undocumented or migration through clandestine means (36, 101, 102).

Thus, migration risk factors may include poverty, stigma, discrimination, social exclusion, language and cultural differences, separation from family and socio-cultural norms (psychosocial distress), administrative hurdles and legal status. All these risks may compete to compromise access to health and social services. Migrants often have to deal with short or long periods with lack of social security and protection that can lead to excessive costs and to the exacerbation of health conditions (45, 102). Despite the recent growth of research in this field, policies and strategies to manage the health consequences of migration have not kept pace with growing challenges related to the volume, speed, and diversity of modern migration. The global economic crisis has introduced variability and change (inversion in some cases) in migration flows and trends; thus, policy makers and their respective policies do not sufficiently address the existing health inequities nor the determining factors of migrant health. Some barriers to accessing health services are surpassed in legislation, but were never implemented in clinical context, and are extremely difficult to measure (36, 45, 103). Adequate monitoring of migrants' health is essential for health systems accurate responses to their needs. In order to collect these data, proximity and outreach approaches tend to be the most adequate methods, since is becoming necessary to go beyond standard misleading procedures (102, 103). Furthermore, huge health inequalities have been detected in health, suggesting an interaction between socioeconomic position (social gradient) and racial or ethnic characteristics. Literature points out towards the supremacy of low income effects among health comparatively with ethnicity, but there is no agreement about the true role and influence of Migration itself as a social determinant of health – an enlightenment regarding this issue would constitute a notable strength, and this thesis aims to explore the suggested relation (45, 46, 85).

Public health approach to Migrants health must be inclusive and multidimensional, focusing on reduction of inequalities and social protection in health in the context of a multi-country and multi-sectorial loom. Several methodological issues and discussion points must be considered (36, 86).

Figure 2. *Policy measures required to tackle the social determinants of health for migrants and ethnic minorities*

Reducing occupational health hazards: better information, inspection, implementation of safety regulations.

Combating social exclusion, improving the rights of non-citizens. Improved policies on individual and institutional discrimination, education, employment, social protection, housing, environment and health services, asylum and irregular migration.

Reducing barriers to labour market participation: tackling unemployment; better matching of work to qualifications.

Inclusive educational policies, attention to linguistic and cultural barriers, underachievement, drop-out and segregation.

More appropriate and accessible health services, improved monitoring of health status and service use, more and better research.

Increased availability of healthy food, better targeting of "healthy eating" campaigns.

Better housing, reduction of environmental health hazards, improved transport and other amenities.

Empowering migrant and ethnic minority communities, mobilizing their health assets and strengthening social networks; combating isolation, loneliness and vulnerability.

Measures to improve knowledge of health risks and the ability to implement it. Strengthening healthy cultural traditions and questioning unhealthy ones. Encouraging avoidance of known risk factors and unhealthy lifestyles.

Socio-economic, cultural and environmental conditions
Living and working conditions
Social and community networks
Individual lifestyle factors
Work environment
Unemployment
Water and sanitation
Education
Health care services
Agriculture and food production
Housing
Age, sex and hereditary factors

How health systems can address health inequities linked to migration and ethnicity (102).

Within the challenges associated to migrants' studies are the measures of the real impact of migration on health systems to effective tailoring the services and interventions in order to improving service utilization and health outcomes. Some of the most frequent approaches for monitoring migrants' health include the standardized recording of migration-related elements such as country/region of birth and/or last residence, the nature of the migratory process, and duration of residence. This information, when presented in census, national statistics reports and health surveys, as well as in routine medical/health information gathering, could provide standardized and uniform health data about migrants. However, the time and method of collection is not often accurate to apprehend sensitive information from vulnerable and inaccessible population, and undocumented people frequently fall between the lines of what is asked (58, 102, 103). This aspect sets the yet unavoidable matter of the lack of standardized data collection on the real number of migrants and their characteristics. Taken this aspect raises a number of crucial reflections: ultimately, it remains to understand

migrants' health needs and conditions if stakeholders, policy and decision makers truly want to improve their health status and effective utilization of health services. Other issues to consider by public health policy makers include the health-seeking behaviours of migrants; those might require targeted interventions or services, adequate provider attitudes, and empirical knowledge on how health systems perform with respect to timeliness, effectiveness and other quality of care variables. This information can help health systems initiate specific grounded programmes to improve the quality of care for migrants, and to integrate migrant health issues into larger health agendas (86, 94, 101, 102).

Additional methodological issues relate to the pressing need to complement statistical disaggregate information with qualitative research, enabling interventions to address how socio-cultural factors affect health behaviour. Furthermore, qualitative methods requiring a minimum standard for data collection are known to allow a responsive and insightful approach to such vulnerable and excluded population, which are valuable to understand people's perspectives, fears and needs (58, 94, 101-103).

As seen in previous section 'Health: a keystone to integration', migration process can affect communicable and infectious diseases (e.g. HIV/AIDS, TB, vaccine preventable and parasitic diseases), non-communicable diseases (cancer, diabetes and mental conditions due to traumatic experiences – anxiety, depression, psychotic disorders, post-traumatic stress disorder), gender-specific challenges related to maternal and child healthcare (reproductive and sexual healthcare, timely access to prenatal care, preventive health services and health promotion initiatives), as well as work or occupation-related illness and injuries (20, 22, 24).

Regarding general health measures, a great number of studies worldwide show lower life expectancies for migrant and ethnic minority groups. Measures of self-reported health are often used to estimate the general level of health among migrants and ethnic minorities, and researchers consistently report lower levels for these groups (tendency often reduced when SES is controlled). Scientific literature reports that the illnesses from which migrants and ethnic minorities suffer are to a large extent the same found in the majority population. The exceptions relate to specific epidemiologic conditions often usual in their countries of origin (in particular among recently arrived immigrants, or among migrants and their children who visit the country of origin), for which clinicians are not always prepared: malaria, Chagas' disease, Tay-Sachs disease, sickle cell disease, female genital mutilation and many lesser-known tropical diseases. Learning to deal with such unusual conditions is, as stated above, seldom the main challenge when it comes to providing adequate services for migrants and ethnic minorities (58, 102).

Given the nature of this thesis, is pressing to note the issue of ensuring early access to reproductive health services, preventive health services, screening and diagnostic care, as well as prenatal and obstetrical facilities and specific medical attention to immigrant women during pregnancy and postpartum. Health professionals should not take free access to healthcare during these women' life period as an accomplished warranty, as it is an envisaged measure in legislation on a large scale in most countries. As indicated above, there are numerous delays and gaps between legislation and practice, and special attention provided to these women will surely reduce their risks and prevent future (economic and personal) costs. Cultural and ethnic reproductive and sexual health practices and norms of behaviour among certain migrant groups, such as female genital mutilation and the use of contraception, may challenge or conflict with those in the host community. Recognition and management of reproductive and sexual health issues and expectations requires cultural sensitiveness and competence from healthcare providers. Such cultural skills, however, are rarely a part of current medical education programmes in Europe, reinforcing the need of clinicians' time and attention towards this population: on behalf of fair equity, further than standard and (un)equality (58, 102, 104).

2.3. Accessibility, utilization and quality of health services for migrants – the concept of Equity in Public Health

Health inequities present prominent challenges since they tend to be expressed among vulnerable population groups. Despite unprecedented technological progress, global inequalities in health continue to grow. As already pointed out, in practice, "Law of inverse care" can be detected worldwide as the most vulnerable and socially disadvantaged have less access to health resources, get sicker more often and die sooner. Social context of global economic crisis influences the lack of progress in countries facing social inequity in health, since it tends to increase prolonged unemployment and impoverishment of increasingly numerous populations, where migrants fit (25).

Equity is a fundamental ethical concept that has been defined as "Absence of unfair and avoidable or remediable difference in health among population groups socially, economically, demographically or geographically defined." (WHO). Health inequities are socially produced differences, systematic and unfair in its distribution. According to West (1994), equity "has anything to do with fairness and justice (...) associated with certain aspects of equality. But it's not just (...) equality between people, but rather equality with respect to certain attributes of the people." (25) (p. 68).

Inequity affects fundamentally the commitment to freedom, social justice and human rights, meaning that the upstream State policies and strategies have failed at some point.

However, in the relation between health and social action, the causes are not unidirectional! Equity in health is the result of public administration of the State (co-intersectorial collaboration), but also has as a prerequisite that the population groups seek to participate in the strengthening of their rights and control over their work and their lives – seeking a full and proactive citizenship. Since this is not always an option to migrants, particularly the undocumented, reflections about social justice must be present in public health policies and agenda when community strategies were being planned. Human rights provide a conceptual framework for linking health, social conditions, principles of civilian participation and political rights (12, 39, 104). The right to health should be interpreted broadly, including not only the attendance in health (services), but also food and nutrition, housing conditions, access to safe water and sanitation, healthy and safe working conditions, and healthy environment. It also includes responsibility for social determinants, so that the highest level of health is achieved (25).

For a long time it has even been standard practice to exclude minority groups from clinical trials and psychological research to reduce sources of variance regarded as "off the point". This in itself constitutes a serious inequity: it means that "evidence-based" practice has been widely implemented in health systems for majority populations, but not for minority ones. Considerations of equity require that urgent measures should be taken to ensure the inclusiveness of health service research in all countries. As previously stated, utilization indicators of healthcare services are often related to the individuals' perception of "matching" between the care needed and the care received. This matching perception, along with age, length of stay, legal status, country of origin and economic situation will define health utilization patterns (54).

Even considering that the major determinants of health are not located within the health sector itself, health services have a huge impact on levels of health and illness, and there is evidence that migrants are often poorly served by existing services due to innumerous barriers: linguistic, social and cultural barriers, health literacy and cultural expectations, beliefs and practices, empirical knowledge about public health system functioning (in several European countries, like Portugal, primary care physician has a "gatekeeper" function), social stigma and anxieties, practical and financial barriers, and perceived trust (satisfaction with the medical attention and/or services received) (58, 103). To some extent, the concepts of "accessibility" and "quality" overlap, because services perceived as irrelevant, inadequate or unfriendly will be less likely to reach the target group. "The "accessibility" of services refers to the ease with which people can make use of them when they need them. In the case of health education, health promotion and preventive care, accessibility relates to the success of these activities in reaching and influencing their intended target group." (58, 102). Regarding the conceptualization of quality in health

services, three measures must be taken into account: quantitative measure of outcomes (seldom possible in practice), subjective measures (such as patient-satisfaction), and procedural evaluations (concerning therapy compliance and adherence) (102).

Equity-oriented health impact assessments should be used to review the influence of policies across sectors on social determinants of health. In relation to migrants, some countries have already tried to tackle the social determinants of their health through "multicultural" policies inspired by the example of countries such as Canada. In Europe, however, such policies have often been surrounded by controversy (58, 101). In 2006, Raphael stated that neoliberal approaches in political decision-making conflict with approaches that focus on improving the social determinants of health due to persistent biases regarding the consideration of the multidimensionality of the health / illness. This results in the contemporary primacy of the biomedical model, focused on biological-behavioral individual (lifestyle). The society, the media, the scientific community language also prefer biomedical objective and reassuring language, contributing to the persistence of this ideological perspective. There are fundamental ontological difficulties in demonstrating the quantitative (economic) impact attributable to the sectors of housing, transport, or education in health and in the excessive health cost. Methodological uncertainties about the measurement conditions of social processes, as well as its effects on citizens' health: in order to act is necessary to produce knowledge! The power of citizens can also influence political decisions but it depends on the overall investment in education, health literacy, knowledge of rights and the creation and provision of the means to intervene. The translation of knowledge that comes from basic and exact sciences is essential in clinical practice and public health to achieve an integrated view on how to intervene in health determinants (25).

Regional and global strategies can also supplement country-specific activities. Governments must ensure coherence between national policies for health, employment and migration. Further, inter-country collaboration is required to assess and subsequently tackle occupational risks and their health consequences before, during and after migrants' period of work, both in their country of origin or return and destination. Policies should take action based on research results that demonstrate evidence of effectiveness in improving the health of migrant populations: to eradicate all forms of social exclusion and combat discrimination and segregation, starting with Institutional discrimination; imposing educational policies to facilitate the integration of migrant children in mainstream schools and ensuring that selection policies make allowances for the extra time required for acculturation and language learning; employment policies and strategies can be directed at the removal of barriers and systematic disadvantages for migrants in the labour market; social protection policies can ensure migrants and ethnic minorities do not fall into poverty, self-destitution and homelessness; environmental policies (such as reduction of environmental health hazards, and improved

transport network) designed to improve living conditions; health policies to ensure equitable access to appropriate services (including prevention and health promotion) for all groups; policies on naturalization, political participation and family reunification can reduce the gap between the rights of undocumented and citizens; and integration programmes for new migrants offering help with language-learning, orientation to the host country and access to education, health and social care services (58, 94, 102, 103). Moreover, intervention programmes should include diaspora migrant health workers in the design, implementation and evaluation of migrant sensitive health services and educational programmes, as well as key stakeholders from the communities to where the program will be directed to (in order to better evaluate local resources towards an optimal implementation, as well as to improve the acceptance of those hard-to-reach populations). To include migrant health in the graduate, post-graduate and continuous professional education training of all health professionals, including support and managerial staff would prevent attitudinal barriers in migrants' accessibility to goods and services (where health is included) (36, 58, 102).

In a cooperation resulting work between WHO and IOM, several possible strategies for improving the health of migrants were identified. Advocacy and policy development was one of them, pointing to the advantages of promoting migrant-sensitive health policies that adhere to the principles of a public health approach aimed at improving the health of migrants; advocating migrants' health rights; promoting equitable access to health protection and care for migrants; developing mechanisms to enhance social protection in health and safety for migrants; raising awareness of, and promoting international cooperation on migrants' health in countries of origin or return, transit and destination; encouraging collaboration among health, foreign affairs and other concerned Ministries in all countries; strengthening interagency, interregional and international cooperation on migrants' health with emphasis on developing partnerships with other organizations, and promoting cooperation for health policies among central and local governments as well as among representatives of civil society. Another strategy regards the assessment, research and information dissemination, in order to identify and fill the gaps in health delivery to match migrants' health needs; disaggregating health information by gender, age and origin and by socioeconomic and migratory status; encouraging health and migration knowledge production, including both quantitative and qualitative studies; documenting and disseminating best practices and lessons learnt in addressing migrants' health needs in countries of origin or arrival, transit and destination. Capacity building consists in sensitizing and training relevant policy-makers and health stakeholders involved with migrants' health in countries of origin or return, transit and destination; promoting increased cultural, religious, linguistic and gender sensitivity associated with migrants' health among health service providers, and training health professionals in addressing health aspects associated with

population movements; creating a network of collaborating centers, academic institutions and other key partners for furthering research into migrants' health and for enhancing capacity for technical cooperation; and training health professionals about diseases and pathologies that prevail in the country of origin or arrival. Finally, service delivery refers to initiating or reinforcing migrant-friendly public health services and healthcare delivery methods for migrants with special needs; strengthening health promotion and disease prevention initiatives to reach out to migrants in the community; establishing minimum standards of healthcare for all vulnerable migrant groups (particularly women, children, undocumented or irregular migrants, asylum seekers, refugees and victims of human trafficking); and publicizing existing services (36).

The perception of quality in health involves and values the role and participation of the users, and this participation is legitimate since the use of services implies the increasing citizen participation in health expenditure (through co-payments and user fees – Portuguese health system is only tendentiously free). The participation of the patient is desirable and essential for various reasons: it improves the decision-making processes involved in health, increases the acceptability of decisions, improves communication between the health system and the citizens and enhances patient autonomy and responsibility for their well-being and health. Besides, citizen participation also contributes in defining health policies and priorities (specific ethnic minorities), facilitates engagement in the promotion of health and legitimizes decisions on complex issues (cost-effectiveness and dilemmas ethical) (25, 105, 106). The participation of "hard-to-reach" citizens implies careful planning of public health actions, preferably within target and in collaboration with key stakeholders, considering the logic of proximal health while facilitating social participation and empowerment to improve health by providing answers and solutions tailored to the needs highlighted in the field. Thus, programs and strategies to promote health in these populations should be based on recognition and critical analysis of social realities incident on public health of populations, following the organizational scheme of characterization, organizing responses, health promotion and disease prevention, detection and restitution of welfare and autonomy for investment in their own health (level of personal commitment and involvement in such decision-making processes) (25, 105, 106). The recourse to community workers (community inner stakeholders) concerning needs assessment and implementation of these programs establishes privileged bridges between community and health services, enabling the construction of adapted programs. Intervening proximally through decentralization of health services, these agents provide health education and health literacy from microsocial contexts, facilitating the integration and social inclusion of minority populations (25, 105, 106).

The strategies formerly outlined are widely shared in several other official documents from CSDH, assuming general recommendations formats whose purpose is also related with

tackling inequities, discrimination, segregation and social exclusion. In summary, public health policies should focus in:

Improving daily living conditions: Improving the well-being of girls and women and the circumstances in which their children are born, placing greater emphasis on early childhood development and education of girls and boys, improve living conditions and working conditions for all, create a social protection policy to support the entire population and create conditions for a prosperous life in old age. The policies implemented to achieve these goals should involve civil society, governments and global institutions.

Addressing the unequal distribution of Power, Money and Resources: To address health inequalities and unequal conditions of everyday life it is necessary to address inequalities – such as gendered inequalities – in the organization of social structure. This requires a strong public sector, committed, capable and adequately financed. Achieving this goal requires more than a solid government – it requires sound governance: legitimacy, space and support to civil society from a responsible private sector and by individuals to agree in public interests and reinvest in the value of the collective action. In a globalized world, the need for administration dedicated to equality applies similarly both to the level of community and global institutions.

Quantifying and understanding the problem and assessing the impact of action: The recognition that a problem exists and ensuring that health inequity is measured – within countries and globally – is a vital platform for action. National governments and international organizations, supported by WHO, should establish systems for health equity surveillance to regular monitoring of health inequalities and social determinants of health, and should assess the impact of policies and actions in this area. The creation of space and organizational capabilities necessary to act effectively on health inequalities requires investment in the training of policy makers and health professionals and the understanding of the social determinants of health by the general public. In addition, it also requires a strong concentration in public health research (32, 89, 100).

3. Pregnancy and Maternity

Pregnancy is one of the most sensitive and vulnerable life events both for the woman and her partner, which generates deep physical and psychological changes, preparing them for parenthood. As a natural biological event, pregnancy implies a physical process underpinned by a complex physiology, interspersed with an inseparable psychological dimension and a personal transition; its meaning is also socially and culturally determined (9, 21, 90).

A pregnant woman is not only perceived as an individual who may require medical care and protection, but also as a person who must be guided or disciplined into the correct modes of behaviour, since something that is described as natural (arising from biology) also conveys a sense of being out of control. In this sense, therefore, women are expected to ensure that they are healthy and prepared for pregnancy. It is usually seen as a joyous life event, concerning the personal and private hopes and desires of those directly involved. It is also a rite of passage, enacted in the public domain, carrying with it changes in perceived roles and responsibilities. Pregnancy is viewed as healthy and natural, both as a necessary component of the transition to parenthood and as a biological and physiological process. As with other natural (reproductive) transitions that occur in women's lives, pregnancy theoretically brings women into contact with health professionals and medical procedures to ensure the wellbeing of mother and baby (20, 21, 90, 107-109).

Regardless of the naturalness associated with pregnancy, the gestational period induces real risks to physiological health of the woman (as will be explained), also producing bodily changes such as weight alterations, risks of deformation or stretch marks on the skin that tend to produce a feeling of emptying the value of her own body *per se* to let herself be filling with the mission of properly providing the best conditions for her future baby. The decentring and devaluation of body image and identity changes, both subsidiaries in pregnant women also imply alterations to her personality and vital priorities arising from changes in her inner world. They involve progressive stages of internalization: incorporation (acceptance of the presence of the foetus in her body), differentiation (understanding and acceptance that the foetus is not part of herself, and that it will be a human being simultaneously dependent and autonomous), and separation (inevitable passage of the foetus to the outside world, and reaffirming her role as caring mother) (108, 110).

Pregnancy is a critical period in which risk factors, such as traumatic childhood experiences, maternal depression, domestic violence, alcohol and/or abuse and teenage pregnancy may affect the parenting skills and child development. Also, this is the period in which the pregnant couple is more sensitive to change, and the baby's birth may be the catalyst for major changes in their parents. It is therefore important to support the pregnant couple and to pay attention to emotional states of the pregnant woman. Health services must

sensitize parents about the importance of children's welfare and develop strategies that support parenting skills, in order to facilitate relations between parents and children to protect the most vulnerable children (108, 110).

According to several authors, in each trimester many specific emotional problems tend to manifest. During the first trimester, behaviour changes due to emotional lability and expressions associated with excessive emotional and unusual reactions, which may alternate with a certain indifference to her surroundings, and decreased resistance to external pressures and routine. Frequent somatic manifestations can be noted, such as nausea, headache or even anorexia, conditioned by physiological changes. In the second trimester, the woman is faced with the reality of pregnancy. Foetal movements become part of the routine, allowing a sedative effect on the anguish of early pregnancy. During this period, ambivalence becomes less evident. In the third trimester there is a resurgence of anxious episodes having numerous fears as latent contents (fear of not being able to be a mother and to meet all the needs of the baby, fear that her baby will be born with a disability, fear of pain during labour, unconscious fear of separation of the baby from her body). In this period, the woman has an intense need for attention, understanding and effective (affective) presence of referral people who convey a sensation of security (90, 108, 110).

The promotion of maternal healthcare through public health strategies implies that comprehensive physical, psychological and social, pre- and postnatal attention are all contemplated in medical / therapeutic action. In Portugal the network of primary healthcare that theoretically presents the crucial primary role in both pregnancy surveillance healthcare and in the early days of the newborn, should articulate and communicate accurately with hospital services for obstetric and paediatric care and follow-up. The training of professionals in the area of pregnancy regarding physical and mental alterations and interactions are helpful tools of an holistic attention and effective intervention to increase familiar skills and techniques necessary to promote greater communication, better therapeutic adhesion and behaviour / lifestyle changes when required and potentiating synergies between all health institutions and its users towards effective optimal healthcare quality (90, 108, 110).

3.1.   Prenatal care, frequent complications and postpartum problems

Prenatal care

The overall goal of prenatal care is to ensure that pregnancy culminates in the birth of a healthy child, without harming maternal health. Most pregnancies are, as mentioned, low risk events. Thus, the objectives of prenatal care reside in the provision of advice, information and support to pregnant and nuclear family, in order to alleviate the symptoms

associated with pregnancy status. It is also to provide a basic program of screening and surveillance intended to prevent or detect as early as possible the complications and high-risk pregnancies, fitting complementarily clinical management in such situations (107-109). According to the expected functional organization of the NHS, prenatal care should be a continuation of a general care program, coherent and previously established (through the general practitioner / family doctor in the primary care level). Thus, if this route is guaranteed, acquired diseases would be diagnosed before pregnancy, receiving appropriate therapy for their effects to be mitigated or controlled more easily during future pregnancy (e.g. diabetes and metabolic control; prior hypertensive disease) (107-109).

Worldwide research demonstrates, through numerous and consistent studies, that pregnant women who have not received regular prenatal care have a higher incidence of complications during and after pregnancy. *Prenatal care* constitutes in its aim wellness care, and involves *social and psychological support*, that will not only lessen the anxiety during pregnancy, but also postnatal morbidity and potential issues with breastfeeding; it involves providing information to women, verbally and in a written format, about daily aspects that may potentially raise doubts about the evolution of pregnancy, nutrition and expected weight gain, hygiene, childbirth and breastfeeding. From the epidemiological point of view, preconception weight can be seen as risk indicator, identifying women with a higher propensity for complications arising during pregnancy (hypertension and gestational diabetes during pregnancy, childbirth and postpartum).

The dietary habits of women should be evaluated at the first appointment, with the aim of balancing and fitting the present needs of food intake; this is also the appropriate moment to assess and monitor the benefits of physical activity recommendations, and to consider the prescription of folic acid. The extent of the nutritional advice should be preponderant considering the proportion of the nutritional risk profile of the pregnant woman (by inherent specificities: excessive pre-pregnancy weight, inadequate weight gain, previous pregnancy complications, multiple pregnancy, chronic illness, allergies and food intolerance, situations requiring rest, harmful lifestyles and habits, anomalous analytical values, factors affecting adequate food intake), being widely advantageous to establish multidisciplinary collaboration between the obstetrician, the midwife and a nutritionist (107-110).

Prenatal care also involves providing *information about sexual activity*. If the pregnancy proceeds normally, there is no need to alter the pattern of sexual activity of the couple. It should only be restricted or suspended if circumstances associated with increased risk of miscarriage or preterm delivery arise (cervix-vaginal infections, shortened cervix, extemporaneous uterine contractility, history of preterm labor or premature rupture of membranes, or during the first week after invasive procedures such as amniocentesis)(108).

Information about the *type of clothing*, *personal hygiene* (including dental and vaginal care), about *consumption habits* (smoking, alcohol, caffeine, drugs) and *medication interactions* should be clarified. Future mothers should also be informed, not only about health risk factors during pregnancy (diabetes, thyroid disease, active tuberculosis, chronic lung disease, severe asthma, epilepsy, clotting abnormalities, Rh- with antibodies, severe anaemia, acute viral infection, congenital heart disease, renal disease and extreme obesity) but also about *lifestyle and personal risk factors* (tobacco use, malnutrition, drug addiction, alcohol and caffeine use), and *alarm signs* that should trigger immediate contact with a healthcare professional: severe or repeated vomiting, dizziness and vertigo, altered vision, sudden increase of weigh, decreased urine output and urinary complaints, abdominal pain, severe or permanent headache, morning oedema of the face and hands, sudden decrease in foetal movement, profuse watery leucorrhoea, vaginal bleeding, fever, tumour or pain in a varicose zone (107, 108).

During prenatal care, women should be able to gather information about how to alleviate symptoms ancillary to the pregnancy status. For instance, nausea and vomiting can be lessened by making small meals at frequent intervals, not reaching the feeling of satiety, or avoiding the smell of certain foods. In the latter case, the prescription of anti-emetics or promoters of gastric emptying can be quite effective, as well as an additional psychological support reassuring the favorable outcome of pregnancy and limited durability of these symptoms (107, 108).

In addition to ensuring the welfare of the pregnant woman and her child, and in order to provide relevant information about the major risks of pregnancy, basic prenatal care includes *essential tests and procedures that screen for complications*. Routine urinalysis, blood pressure evaluation, uterine/foetal palpation, foetal heart auscultation and assessment of uterine height/foetal growth are major assets of the clinical and analytical monitoring of pregnancy, which should be provided to all pregnant women. In addition to this program, all pregnant women are also entitled to receive a screening program for foetal anomalies and pathology associated with pregnancy, covering ultrasound examinations, biochemical screening for chromosomal disorders, screening of immune status (rubella, toxoplasmosis, syphilis, hepatitis B, and human immunodeficiency virus), screening of anti-D antibodies in Rh negative pregnant women (administration of anti-D serum at 28 weeks in pregnant women with negative indirect Coombs test), and diabetes screening (107, 108).

For the routine surveillance of pregnancy, the basic program for all pregnant women involves an *initial appointment*, where an assessment of the medical and personal history should be carried out. In addition to the information previously explained, it is essential to ensure that the first appointment occurs as early as possible (preferably until 12 weeks of gestation). This will not only guarantee a more accurate assessment of the gestational age,

but also a possible early detection of obstetric complications. The first prenatal visit involves a detailed construction of anamnesis (general demographic, gynaecological, personal and familial history, obstetric history and current clinical history), physical examination (general, gynaecological, obstetric and summary analysis of the urine), additional tests (systematic and specific analytical determinations, and systematic, specific and selective exams), detection of risk factors, and provision of general information to pregnant women, as previously described (107-109).

There is no consensus on the timing of *subsequent prenatal visits*, or on the ideal number of appointments during pregnancy. Most authors suggest monthly visits up to 32 weeks, biweekly visits from 33 to 37 weeks and weekly visits from 38 weeks of pregnancy. In all appointments routine tests should be conducted to assess blood pressure, weight, urine analysis, fundal height, foetal auscultation, review of diet and other requirements, assessment of the pregnant situation and foetal presentation (in the 3rd trimester), vaginal examination of the cervix and evaluation of the presenting part (from 34-35 weeks). Regarding additional complementary exams, these include three ultrasound scans (11-14 weeks for dating of pregnancy, nuchal translucency measurement, diagnosis of multiple pregnancy, detection of major foetal abnormalities, and associated gynaecological disorders; 20-22 weeks for detection of major congenital malformations and assessment of foetal growth, placental location, amniotic fluid volume, and determination of foetal gender; 32-36 weeks to assess foetal growth, detection of abnormalities, location of the placenta, amniotic fluid, foetal biophysical profile and Doppler flowmetry). Blood tests are also part of the periodic vigilance plan, with trimestral evaluations of hemoglobin, red cell indices, platelet count, blood glucose, maternal infection serology, urine culture, and Coombs tests in Rh negative women. Bacteriological examination of ano-vaginal secretion is carried out at 35-37 weeks for detection of colonization with group B Streptococcus (107-109).

A pregnant woman should be informed during the last months of pregnancy about the symptoms and signs of imminent labour, and receive instructions to call at the hospital in the presence of the following: suspected rupture of membranes, regular uterine contractility, pain, vaginal bleeding, sudden decrease of foetal movements (107, 108). If at 41 gestational weeks delivery has not yet occurred, then induction of labour is proposed.

Pregnancy problems – Maternal pathology

One of the challenges associated with specialized care during pregnancy is the frequent overlap between physical and psychological factors, balancing the relevant psychosomatic conversion, as well as emotional and psychological imbalances durable enough to cause damage or physical illness. The objective of reviewing the most frequent pregnancy complications to maternal health is to provide a theoretic and practical framework

appropriate for most pregnant (low risk women), without extensively addressing the whole maternal pathology from an obstetric point of view (90, 107, 108).

<u>Physical Complications</u>

The most frequent complication of the first trimester of pregnancy is miscarriage, defined as the diagnosis of a non-viable intrauterine pregnancy before 22 weeks of gestation. In most cases, miscarriage is caused by an abnormal development due to chromosomal abnormalities. Other causes of miscarriage are infection, severe malnutrition, substance abuse, abnormal maternal immune response, or uterine malformations. Miscarriage may be diagnosed by ultrasound on a routine examination in an asymptomatic woman, or the ultrasound may be motivated by abnormal vaginal bleeding and/or lower abdominal pain, when the uterus attempts to empty its content (*threatened abortion*). If diagnosed at a later stage, the process of *spontaneous abortion* may already have started (uterine cervix already open) or be completed (*complete abortion*). Women need to receive proper clinical and psychological support for safety and alleviation of suffering associated with this situation.

Ectopic pregnancy is another complication of the first trimester of pregnancy, defined as implantation of the fertilized egg outside the uterine cavity, more commonly in one of the fallopian tubes. In these cases, foetal growth usually causes rupture of the tube, resulting in foetal death and substantial internal bleeding, frequently putting the mother in a life-threatening situation. More rarely, the foetus is expelled from the fallopian tube into abdominal cavity and is usually slowly re-absorved.by the organism. Early diagnosis is the key to avoid serious complication or treatments that will condition future fertility. Ultrasound and blood human chorionic gonadotrophin quantification are at the centre of early diagnosis of this situation (107, 108, 110).

Hydatidiform mole is a rare complication of the first trimester of pregnancy, characterised by anomalous placental development, caused by an abnormal chromosomal constitution. In most cases, the mole is thought to be caused by an abnormal fertilization, and there is no foetus present (*complete mole*). In 5% of the cases there is foetal tissue present but it is incompatible with life (*partial mole*). Since about 15% of molar pregnancies evolve to an invasive cancer, surgical evacuation of the uterine content, together with adequate follow-up of human chorionic gonadotrophin levels are essential (108).

Hypertension (HT) is the most common medical occurrence during pregnancy. It is diagnosed in the presence of one of the following criteria, documented in two separate observations, with a minimum interval of 6 hours between them: systolic blood pressure ≥140 mmHg, diastolic blood pressure ≥90 mmHg. Hypertension can be present before pregnancy started (*chronic hypertension*), or it can be induced by pregnancy in previously normotensive women. The latter can be subdivided in *gestational hypertension*, (transitory hypertension in

the second half of pregnancy without additional complications), *preeclampsia* (associated with significant proteinuria, that can complicate with maternal renal and hepatic dysfunction, reduction in blood platelets and decreased placental function leading to fetal growth restriction) or *eclampsia* (a preeclampsia that is complicated by the development of maternal cerebral oedema and seizures). More rarely, patients with chronic hypertension can develop superimposed preeclampsia. The reasons for the proximal relation between pregnancy and HT are not completely understood, but it is known that proper pregnancy surveillance may prevent or mitigate the onset of serious complications, leading to a timely intervention that can protect the life of the mother and foetus. The hypertensive syndromes induced or aggravated by pregnancy can initially present signs and symptoms common to other situations. Its non-recognition can result in postponement of therapeutic measures, resulting in adverse maternal and foetal outcomes.

Another complication of pregnancy is *Diabetes Mellitus* (DM), a disease caused by inadequate secretion or action of insulin. DM can be present prior to pregnancy (*pre-existing diabetes mellitus*) or it can be triggered by pregnancy (*gestational diabetes*). In both situations it constitutes an increased risk to the mother, as it increases the risk of hypoglycaemia, ketoacidosis, urinary infection, chorioamnionitis, preeclampsia / eclampsia. Since glucose crosses the placenta, elevated maternal blood sugar will cause the foetal pancreas to increase the production of insulin, resulting in the long run in increased foetal growth (macrosomia), which is associated with prolonged labour and shoulder dystocia. Increased foetal glycaemia during the first trimester is associated with an increased risk of foetal malformations, and during the other trimesters with increased foetal urine production, resulting in polihydramnius (augmented volume of amniotic fluid). Maternal hypoglycaemic periods, occurring mainly during the night, are associated with an increased risk of foetal death. The new-born may also experience respiratory distress and hypoglycaemia. In order to reduce all of these risks of pregnancy, diabetic women should receive prenatal multidisciplinary care from a team of obstetricians, midwives, endocrinologists and nutritionists, with the major goal of achieving adequate maternal glycaemic control (107, 108, 110).

Polihydramnios and oligohydramnios refer to abnormal quantities of amniotic fluid, as diagnosed by ultrasound. Polyhydramnios is a relatively rare disorder, occurring in conjunction with foetal malformations, infections, Rh incompatibility and diabetes. It may occur suddenly, but it is more frequently a relatively stable situation of the last trimester of pregnancy, associated with premature labour and intrapartum complications, such as uterine contraction anomalies, placental abruption, postpartum haemorrhage, foetal mal-presentation and prolapsed umbilical cord. Oligohydramnios corresponds to a reduced amount of amniotic fluid, and it is associated with placental insufficiency, intrauterine growth

restriction, and certain congenital abnormalities. It can result in cord compression when uterine contractions start and the resulting foetal hypoxia (107, 108).

Anaemia is the most common hematologic complication of pregnancy, and is defined as a haemoglobin concentration of less than 10 g/dl or a haematocrit less than 30%. An important component of anaemia is due to the normal physiology of pregnancy, where there is an increase in plasma volume that dilutes haemoglobin. In 95% of cases anaemia is associated with decreased iron intake, and iron supplementation will correct the situation. Other more rare causes are the haemoglobinopathies (megaloblastic anaemia, haemolytic anaemia and thalassemia). Whichever the cause, anaemia is associated with fatigue, poor healing, lower resistance to infection and increased obstetric complications, such as preeclampsia and eclampsia, preterm birth, and foetal growth restriction, reduced milk production, and postpartum depression (107, 108, 110).

<u>Psychological complications</u>

During pregnancy, a woman stands in a position of heightened vulnerability as a precise idea of her body's limits starts dissolving, given the necessary extension of her identity (construction of motherhood), as well as her self-concept and self-image to others (social construction of identity). All physical, biochemical, metabolic and hormonal changes, and respective risks are accompanied by an intense psychological experience, sometimes altered and associated with behavioural manifestations: emotional lability, dysphoria, irritability, and somatic diseases, which are characterized by the common fact that they are usually transitory, brief and limited in time. An empathic listening on the part of the attending physician or supportive psychotherapy from a therapist often constitutes sufficient strategies to ensure the welfare of the pregnant and her family. These changes must be distinguished from persistent psychiatric disorders, which may trigger damaging repercussions in pregnancy and childbirth outcomes (20, 21, 90, 110).

Most depressive symptoms in pregnant women are mild and transient. Only 10% of *antenatal depression* cases are serious enough to impair functional capacity of women: feelings of inadequacy, self-devaluation, fatigue, sleep and appetite disturbances. Somatic complaints associated with anxiety states are common in these cases of depression in the early months of pregnancy, and this may extend beyond the delivery. Symptoms of depressive disorder may also be incorrectly assumed to be symptoms associated with pregnancy or the postpartum period, and this complication is poorly identified by general practitioners (20, 65, 110). Several recent studies tend to show that antenatal depression is a predictor of postnatal depression. Early detection and intervention is imperious, since uncontrolled maternal depression prejudice the developing foetus: mood and anxiety disorders during pregnancy are associated with diminished foetal wellbeing, poor obstetric

outcomes (birth weight, body mass index and preterm delivery, as well as several health and behavioural problems during childhood) due to poor prenatal care, oxidative stress and consequent somatic complications, interaction with chronic stressors (e.g. unemployment, ethnicity, racism, lack of social and affective support, material deprivation) which increases substance abuse and suicide attempts (20, 90, 110). The depressive syndromes in the first pregnancy quarter have a more favorable prognosis, usually remitting during the second quarter. Depression during the third quarter can last beyond the birth, and particular clinic attention should be given to the future mother (108, 110).

Pregnancy is a period of relative anxiety for most women. However, the anxiety associated with normative biopsychosocial changes inherent in pregnancy should be distinguished from *anxiety disorders* serious and lasting enough to interfere with the quality of everyday life of the pregnant woman. Isolated anxious states are normal, especially during the first and third quarters of pregnancy. However, when anxiety episodes become permanent, associated with initial insomnia, varied somatization and interfering with daily activities, they should not be underestimated by the physician (especially in the presence of predisposing factors of poor prognosis: poor social environment, professional, economic or family problems). The anxiety disorders should not be taken lightly as they can interfere with foetal-placental unit. In acute cases of anxiety (panic disorder) psychotherapy is critical since administration of psychotropic drugs in the first quarter must be avoided (it may be needed in subsequent quarters). The situations of acute stress during pregnancy increases maternal serum cortisol that may impair the central nervous system of the foetus. The risks to the foetus also involve prematurity, low birth weight, low birth weight for gestational age, and complications during labour (90, 108, 110).

Complications in Labour

Complications arising during labour are particularly challenging to healthcare professionals, as decisions frequently have to be made carefully and quickly. (108, 110). The abnormally slow evolution of labour is called *dystocia*, and results from phenomena that interfere with dilatation of the cervix and the progression of the foetus through the birth canal. Curves are available for defining the optimal length and rate of progress of labour, which is divided into three stages: the first stage (dilatation) that starts at the onset of regular uterine contractions and ends at full cervical dilatation; the second stage (expulsion period) begins at full dilation and ends with foetal expulsion; and the third stage (placental expulsion) that starts at foetal expulsion and ends after expulsion of the placenta. The first stage of labour can be further divided into two phases: the latent phase and the active phase. The active phase begins when the cervix is almost fully effaced and 4 cm dilated (108, 110).

Dystocia may be due to dynamic or mechanical aspects. Dynamic dystocia can be due to abnormal uterine contractility (insufficient or uncoordinated forces) or to inadequate maternal pushing efforts to aid with foetal expulsion during the second stage of labour. Mechanical dystocia can be due to abnormal presentation, lye or size of foetus and/or to maternal pelvic anomalies, hindering mechanical progression of the foetus through the birth canal. Judicious use of oxytocin, instrumental vaginal delivery and caesarean section are key factors in the clinical management of dystocia (108, 110).

Contractions are essential for the progress of cervical dilatation and foetal descent through the birth canal, but they compress the blood vessels running inside the uterus, to decrease temporarily blood supply to the placenta and reduce placental gas exchange. They may also cause temporary compression of the umbilical cord between a hard foetal structure and the uterine wall. Increased frequency and force of uterine contractions may result in decreased oxygen supply to the foetus and ultimately in foetal death or long-term neurological damage. Constant monitoring of the foetal heart rate is a key factor for the early detection of signs of poor foetal oxygenation, and medication that reduces uterine contractions (acute tocolytics), instrumental vaginal delivery and caesarean section are the main procedures that are used to avoid adverse outcome.

Postpartum Care – Complications and concerns

The postpartum period is defined as the first 6 weeks occurring after birth. It still carries with it several risks to maternal health. Minor problems are relatively frequent as a consequence of the delivery process (e.g. constipation, haemorrhoids, afterpains resulting from uterine involution) and these may be combined with more severe complications to worsen maternal well-being. Among the latter are haematomas or abscesses of the perineum and abdominal wall (pooled blood or pus in maternal tissues), uterine infections, sepsis, anaemia, thrombophlebitis and pulmonary embolism (108, 110).

Problems with *breastfeeding* are also common in the puerperium. Breastfeeding is an intimate interaction between mother and baby that supports and facilitates affective attachment. It requires privacy, especially in the beginning, and tends to be a physically demanding activity that benefits from good physical and emotional support. Having trouble with breastfeeding can be emotionally challenging to a new mother as she might develop feelings of incapacity and guilt, besides objective physical obstacles and complications (e.g. breast engorgement, or mastitis) that must be managed and treated (108, 110).

Finally, *postpartum depression* must be assessed and carefully differentiated from postpartum blues. The natural suppression of the maternal hypothalamic-pituitary-adrenal axis in the immediate postpartum can cause emotional instability, and blues are prompt to occur (in about 70% of women, from 2-3 days after delivery until 10 days). Postpartum blues

entail hormonal swings, sleep deprivation and impeding lactation, and are more frequent in women who are not physically re-established, particularly if the birth was debilitating, and it is limited in time and with a good prognosis. On the contrary, postpartum depression usually develops 10 days or later after delivery, and tends to worse over time. It affects 8-10% of women, with a negative impact on the whole family and on child development. Before diagnosing postpartum depression, thyroid imbalance must be ruled out. Once the diagnosis is established, counselling and psychotherapy should be provided to the mother, as well as adequate pharmacological treatment. Another extreme form of depression requiring medication is *postpartum psychosis.* Despite its rarity (incidence of 2-3%), symptoms may be extremely severe (e.g. manic or depressive episodes, confusion or disorientation, delusional thinking, suicidal or infanticidal behaviours) and if suspected, the mother should be promptly referred to a psychiatrist. Mothers with previous history of bipolar disorder are particularly at risk (108, 110).

3.2.   Vulnerabilities in pregnancy and motherhood in the context of migration

As previously described, pregnancy is here understood as a normative period of a woman's life that involves personal development, transformations, psychological and emotional maturation, and adaptation to gradual changes in the body (anatomical and physiological), integration of new family and social roles, leading the woman towards the acceptance of the new being inside her and preparing herself for the future role of mother. All those processes involved in pregnancy and maternity can be very stressful in normative stable conditions (21, 111).

Applying the previous notion of vulnerability trend often encountered in the immigrant population, when associating it with the stress of pregnancy and postpartum periods, all the difficulties of immigrant status becomes exponential: feelings of insecurity, isolation, self-perceptions of affective deprivation from key relationships, missing its local culture and family, and strangeness in relation to new cultural habits, linguistic and religious challenges and differences, and sometimes even hostility and indifference on the part of the host population becomes dramatic and weakening. All these factors make women particularly vulnerable during pregnancy and early motherhood, awakening feelings of distress and anxiety and increasing the risk of postpartum depression (16, 21, 42).

In receiving countries, migrant women are often faced with difficulties in pregnancy and childbirth. Several studies have indicated that being an immigrant or belonging to an ethnic minority tends to be associated with a higher frequency of risk factors for perinatal infection, increased perinatal and infant mortality, higher maternal mortality, greater number of premature births and having low birth weight babies (16). Several studies indicate that

20% of maternal deaths directly or indirectly related to pregnancy are verified among women with poorly, delayed or even non-existent monitoring regarding antenatal care (112).

A Portuguese study conducted in the municipalities of Amadora and Sintra, reveals the fragility and vulnerability of these populations. It was observed that perinatal mortality was 9.6%, 13.1% in immigrants' children and 7.1% in Portuguese children. Immigrant population suffered more from disease during pregnancy, including infectious diseases, increased consumption of alcohol by mothers, and families having higher smoking habits. The same study states that the late onset of consultations or unsupervised pregnancy, the mother's pathology and social problems are relevant risk factors for the higher foetal and neonatal mortality in the offspring of immigrants (42). These results are replicated among numerous studies worldwide, showing consistent impoverished health outcomes both for the mother and the baby (10, 40, 48).

Regarding the care of the baby, there is a prevalent marked insecurity from the mother, as the woman sees herself confronted between traditional knowledge and habits acquired within her own family – that might be seen as inadequate and outdated in the host country – and the practices suggested / imposed by healthcare practitioners, which often do not make sense to the woman (as they don't take into account cultural knowledge and maternal background), only increasing maternal anxiety and stress (48). Mothers are resistant to abandon cultural security practices when considering such vulnerable meaningful phases. Perniciously, when the modification and abandonment of certain cultural practices in the child care are attempted by mothers, for wanting to do what host society considers correct (and for fear of being judged or criticized), women tend to feel more depressed and "incompetent", and cannot establish a satisfactory attached relationship with their babies. Consequently, they are effectively less able to have the appropriate responsive behaviours to suppress babies' needs regarding health, growth and development. In those cases, cultural competence and clinical sensitiveness are crucial as the lack of social support and the family of origin becomes more pronounced and harmful (19, 47).

Social support is crucial at this stage of a woman's life to mobilize all resources available to enable her mothering functions. Studies report that postpartum depression incidence is greater when the social network (e.g. family, friends) and social support are weak. Ramos also noted that women who are isolated, uprooted, depressed and without traditional references of support, sometimes being very young, and apart from family resources are more vulnerable to risky situations (having more postpartum depression and psychosis) (48). Their children also manifest more functional disturbances (e.g. sleeping and eating problems), more psychological disorders and learning difficulties (42, 112).

3.3. Maternal health indicators: European recommendations

"*Maternal health has received less scientific attention over the years than the health of babies.*" (European Perinatal Health Report, p.94)

Maternal mortality is considered a major marker of health system performance. Poor maternal, newborn and child health remains a significant problem in developing countries. Worldwide, 358.000 women die during pregnancy and childbirth every year. The majority of maternal deaths occur during or immediately after childbirth. The common medical causes for maternal death include bleeding, high blood pressure, prolonged and obstructed labour, infections and unsafe abortions (101). Despite being a global concern, fortunately this is not a global reality and differences in policies and recommendations are taking into account contextualized goals, resources at micro and macro levels, but also aspects that are remaining to accomplish a better transversal health, namely among future and recent mothers (36, 104, 113).

Despite significant improvements in recent decades regarding maternal healthcare in European systems, mothers and their babies are still at risk during the perinatal period, (pregnancy, delivery, and postpartum). Each year from 335 to 1000 women die in Europe during the perinatal period because of causes related to pregnancy and/or delivery. Promoting healthy pregnancy and safe childbirth is a goal of all European health care systems. An important multi-country project involving 27 countries, The EURO-PERISTAT, began in 1999 as part of the EU's Health Monitoring Programme and has been providing scientific knowledge and comparable data on perinatal health in Europe. Under this scope, large network of contributing experts conducted several studies to monitor and evaluate maternal and child health in the perinatal period in Europe using valid and reliable indicators. Among other priceless information and scientific publications, The EURO-PERISTAT team (where Portugal is represented by Professor Henrique Barros, Director of the Institute of Public Health) has published the *European Perinatal Health Report* (2008 and 2013), where a list of core, recommended and further development indicators for perinatal health surveillance was provided (114, 115). Not only the report brought together for the first time statistical information on the characteristics, health, and healthcare of pregnant women in 25 Member-states of the European Union and Norway, but also provided agreement on the definition of indicators, enabling their application worldwide (113-117).

Moreover, in the foundation of the EURO-PERISTAT project resides one of the core beliefs and leitmotifs of this thesis: the consciousness that risks and burdens often associated to maternal care are not distributed equally among social strata and different population groups (114, 115, 118). Perinatal health inequalities exist between European countries, and within each country, social determinants of health interact to result in poor pregnancy outcomes. Moreover, as seen, these inequalities carry long-term consequences

during adulthood (e.g. hypertension and diabetes). Thus, it is well established not only among the referred report, but also along this theoretical framework and background that monitoring perinatal health is an important component in understanding and addressing health inequalities among adults, especially vulnerable and hard-to-reach populations, where migrants and ethnic minorities are included (114, 118).

The concept of *maternal death* already gathered some consensus, as it is present in 10th revision of the International Classification of Diseases (obstetric causes of death). It is defined as the death of a woman while pregnant or within 42 days after delivery, irrespective of the duration and site of the pregnancy, for any cause related to or aggravated by the pregnancy or its management (not from accidental or incidental causes). Maternal deaths are subdivided into direct and indirect obstetric causes of death. In Europe, the main direct causes for maternal death are postpartum haemorrhages (13.1%), thromboembolisms (10.4%), complications of hypertension (9.2%), and amniotic fluid embolism (10.6%) (58, 102, 104, 114, 119).

Maternal morbidity was much more difficult to congregate agreement, constituting an indicator that had no widely consensual definition for various reasons, including these three: lack of agreement in the selection of conditions to include, in the means of identifying cases, and a relative lack of experience with the concept. Although the group had identified severe maternal morbidity as an important indicator, few countries collected in a regular or standardized basis. The EURO-PERISTAT study set up a working group to conduct an extensive review of potential maternal morbidity indicators. Results from this review were presented during a working group meeting in Porto (June 2008), and consensus was reached about the indicators of severe maternal morbidity that should be collected and validated: eclampsia, surgery, blood transfusion, admission in Intensive Care Units and embolism (114-119).

The resulting list of perinatal health indicators was produced having in the basis a multi-stage DELPHI consensus process, throughout three phases (between 2002-2006), constituting a formalized method in which a panel of experts (clinicians, epidemiologists, statisticians, midwives) respond to a successive series of questionnaires with the aim of achieving a consensus on key principles or proposals. The final consensual list has 10 core and 24 recommended indicators of perinatal health, focusing four major themes: 1. Foetal, neonatal and child health; 2. Maternal Health; 3. Population characteristic factors; and 4. Healthcare Services. Health indicators were defined as core (essential to monitoring perinatal health), recommended (considered desirable for a more complete picture of perinatal health across the member states), and indicators for further development (important aspects of perinatal health that require further work before they can be implemented) (114, 115, 118).

This scientific work will vote special attention to indicators and recommendations in maternal health and health services, including prevalence of severe maternal morbidity, perineum trauma and postpartum depression, as well as distribution of timing for first antenatal visit (114, 115).

Figure 3. EURO-PERISTAT Indicators: Maternal Health and Healthcare Services

MATERNAL HEALTH

C: Maternal mortality ratio by age, mode of delivery
R: Maternal mortality ratio by cause of death
R: Prevalence of severe maternal morbidity
F: Prevalence of trauma to the perineum
F: Prevalence of faecal incontinence
F: Postpartum depression

HEALTH CARE SERVICES

C: Mode of delivery by parity, plurality, presentation, previous caesarean section
R: Percentage of all pregnancies following fertility treatment
R: Distribution of timing of first antenatal visit
R: Distribution of births by mode of onset of labour
R: Distribution of place of birth (according to number of annual deliveries in the maternity unit)
R: Percentage of infants breast fed at birth
R: Percentage of very preterm babies delivered in units without a neonatal intensive care unit (NICU)
F: Positive outcomes of pregnancy (births without medical intervention)
F: Neonatal screening policies
F: Content of antenatal care

(C=core; R=recommended; F=further development)

(European Perinatal Health Report, p.20)(114)

CHAPTER II – AIMS

This research aims to evaluate potential inequalities in access, utilization and quality of maternal health care in immigrant pregnant women considering all actors' perspectives in this context: immigrant recent mothers from countries with greater representation in Portugal (African countries of Portuguese speaking, Brazil and Eastern European countries), health professionals and community organizations. Another goal is also to compare migrants' experiences regarding their interaction with public health facilities with Portuguese women in the same maternity periods, assessing social determinants associated with pregnancy and maternal health, as well as personal representations to the adequacy of received care.

Therefore, this thesis purposes to explore and provide evidence in order to answer the following research question:

- ✓ What are the main clinical and social determinants of health (reproductive, general, mental) in immigrant and native women, prenatally and postpartum, and how do these specific determinants of women's health relate with their access, use and quality of care in the defined periods?

More specifically, this thesis also targets to search information about the succeeding issues, in order to:

1. To evaluate and review the access, use and quality of healthcare in migrant population during pregnancy and postpartum period, with particular emphasis on how this interferes with maternal health indicators or outcomes.
2. To assess the perception of immigrant women regarding the access, use and perceived quality of care during pregnancy and early motherhood.
3. To verify whether there are differences regarding women's perceptions about quality and appropriateness of care received between immigrant and native women (during pregnancy and postpartum).
4. To measure and clarify the impact of Migration as a social determinant of maternal health, as well as the impact of other social determinants (e.g. income, education level) in health status of migrant and home-grown women, by evaluating possible differences in obstetrical care (and outcomes) between native and immigrant women.
5. To analyse the role of being a migrant in the frequency of perceived stress, depression, impoverished mental functioning and perceived low social support at postpartum, even when adjusting for other variables of interest.

CHAPTER III – RESEARCH METHODS

RESEARCH METHODS

Research protocol followed a mixed methodology for collecting and analysing data (quantitative and qualitative interface). This choice is assumed as a major strength, and will be based in demand for complementary methods to gather greater understanding, through multiple perspectives and analysis grids, essential when the object of study is an issue as complex as migration as a social determinant of health. A cautious analysis of key indicators and variables in the field of Public Health will be made, considering subjective meanings that determine active decision through healthcare and behavioural change (e.g. health literacy and expectations, cultural health issues and healthcare demands and interaction with facilities and professionals).

Mixed methodology: criteria and motives for scientific option

Given the complexity of this research' goals, postulated in the preceding section, the methodological option lies in a mixed methods approach. Its central assumption follows Creswell (2003) definition about the knowledge claims, strategies and methods regarding the subjacent criteria and motives for this scientific option: "collecting diverse types of data best provides an understanding of a research problem." (120) (p.21). The same author defines mixed methods approach as "(...) the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve the integration of the data in one or more stages in the process of research." (120) (p. 212).

When we consider public health field, it's imperative to recognize that firstly, both qualitative and quantitative methods have limitations and biases, so it is justifiable and desirable that complementarities between the two are used to bridge the gaps of both (by making an effort to search by their convergence via triangulation techniques); conversely, if both respond to different issues and aspects of a topic, then health research is much more robust if exploring the more personal and subjective aspects of the user's perspective (qualitative methods), subsequently complemented with numerical indicators (quantitative methods), sufficiently broad to enable theoretical and scientific production. Moreover, the positioning of the researcher who intends to obtain her degree with this scientific work agrees with stance that both qualitative and quantitative methods are indicated and essential for global seizing of social reality (121), which is constituted by objective facts and subjective attitudes that have real impacts in health status, in seeking care, regular monitoring and treatment adherence.

To further support the validity of this option, it is useful to also revisit Bryman's contributes on this issue (1992) (121), as they oriented the present choice. The author

identified several ways of integrating quantitative and qualitative research, from where the following are highlighted: qualitative research can support quantitative research and vice-versa; both can be combined in or can provide a more general picture of a subject; the problem of generality can be solved for qualitative research by adding quantitative findings, whereas qualitative findings may facilitate the interpretation of relationships between variables in quantitative data sets; and the relationship between micro and macro-levels of social reality can be clarified by combining qualitative and quantitative research, which can be appropriated in different stages of the research process (120, 121).

According to Barton and Lazarsfeld (1995), qualitative research can reveal possible connections, reasons, effects as well as numerous aspects of human and social processes that can be useful in generating hypothesis, but also for an accurate interpretation and clarification of statistical results (121) (as it is intended to be done in this work).

Triangulation implies an extension of the research activities with the aim of promoting quality and groundwork in results when combining quantitative with qualitative strategies. The construction of this concept is generated from the notion that the object of study is shaped by the method used for its apprehension. Thus, the biases introduced by the methods used are considered artefacts; on the other hand, the research hypotheses tend to become more solid if confirmed by comparing a series of complementary methods (121).

Uwe Flick (2003) proposed the following definition of triangulation, entirely shared in the methodological conceptualization of this thesis: "Triangulation includes researchers tacking different perspectives on an issue under study or more generally in answering research questions. These perspectives can be substantiated by using several methods and/or several theoretical approaches. Both are or should be linked. Furthermore, it refers to combining different sorts of data (...). As far as possible, these perspectives should be treated and applied on an equal footing and in an equal consequent way. (...) triangulation should produce knowledge at different levels, which means they go beyond the knowledge made possible by one approach and thus contribute to promoting quality in research." (121) (p.41).

The development of this integrated study design was also advocated and defined by Miles and Huberman (1994) as a basic design of parallel use of qualitative and quantitative research: it starts with previous literature review, both on quantitative and qualitative data (systematic review, further explored), followed by collecting qualitative data (semi-structured interviews); latter, a survey (cross-sectional study) was as an intermediary step, before the results from both steps are elaborated and validated in a second "qualitative" (comprehensive) phase (120, 121). Data triangulation will be applied in this last phase as an

asset for data analysis and to better respond to the defined objectives, allowing reaching a maximum of theoretical profit and phenomenological comprehension of the reality, through complementary data (121).

Maternal Healthcare in Migrants: a systematic review

An initial approach to the scientific work and state of art in the field of migration and health included a systematic review of literature, published in the past two decades. This study was an achievement in understanding the theme and its primordial challenges. Additionally, it constitutes a considerable added value in the framework for the scientific work of this thesis.

One of the central inherent aspects in this review study is related to the non-exclusion of qualitative studies *per se*, since we believe that these are essential in providing indications and sensitive information of extreme relevance from the perspective of users, which ultimately determine demand, access and effective use of available services. Therefore, one of our goals is to provide and reinforce evidence on the major role that perceived needs, cultural knowledge and individual expectations (e.g. health literacy) potentially influence the subjective perceptions of the migrant population about health and adequate care, affecting request and adherence to treatment or health behaviour advice (122, 123).

Search strategy and criteria

We considered all studies that met the requirements defined by inclusion and exclusion criteria set (peer-reviewed publications on migrant population published between 1990 and early 2012). In a first moment, we established some inclusion criteria in order to select and organize the 854 articles we gathered from our search sentence (articles obtained from Medline and Scopus database, duplicates excluded). Therefore, as inclusion criteria we primarily proposed the following: a) Language (considered only articles whose abstracts were written in Portuguese, English, Spanish and French); b) Original articles (in order to delete comments, editorials, reviews and copyright guidelines); c) Migrant women population during pregnancy or on maternity period (less than one year); d) Quantitative or qualitative assessment on access, use and/or perceived quality of care received specifically for being or having been pregnant (within the defined period); and e) Evaluation of health outcomes and/or presentation of comparable health indicators.

Refining selection and strengthening criteria

Study selection was performed in three stages, as we perceived the need to refine the criteria according to the proposed objectives. At a first phase, we began to outline that

even when inclusion criteria are satisfied, all articles whose participants were in a situation of forced migration, are refugees or asylum seekers would be excluded (exclusion criteria): the conditions underneath the migration process are considered qualitatively divergent, introducing potential bias linked to the presence of worsening symptoms – experiences of higher disruption and psychosocial suffering, not comparable with the "standard" and self-determined migration process. We also excluded internal migration.

In a second phase, we sought to improve our criteria, by stating that: a) articles with evaluation of health outcomes and/or presentation of comparable health indicators were excluded when not based on assessment on access, use and/or perceived quality of care received; b) we only considered articles with reference to health outcomes and/or health indicators related to the aimed period (pregnancy and/or postpartum – extended until 1 year after delivery, defined as "recent maternity") – therefore, outcomes which aren´t explicitly resultant from maternal healthcare in the defined period will also be excluded; c) articles with absence of control group (or comparable health indicators with values from indigenous population mean); d) we excluded articles whose participants are registered as having health conditions as well as alcohol and drugs consumptions, potentially confounding observed outcomes; e) we only considered articles resulting from studies whose participants are described above (those relating to practitioners' views, experiences and perspectives were excluded); f) exclusion by date of publication: prior to 1990 (global socio-political reality and motivations of migration are qualitatively different).

Data collection process

The studies selected (selection by reading the abstract) were read in full to confirm whether they were original works that assess quantitatively and / or qualitatively access, use or quality of healthcare of immigrant pregnant or recent mothers (up to one year after delivery). In order to identify original studies, which may not have been identified through the search expression used, lists of references of systematic reviews and / or meta-analysis were checked manually.

To the selected papers in the two previous steps a protocol for data mining was applied. The data extraction was carried out independently by three members of the working group and the discrepancies found were resolved by consensus. When information from the same study was reported in more than one publication, only one of the publications was selected. Full manuscripts were obtained for all the 30 articles selected for systematic review. No quality scoring has been applied to this review since we included studies with major distinctive methodologies (quantitative and qualitative data).

Results

The results of the Systematic Review are presented in Paper I (please see the Results section).

Qualitative Study

Sample

A total of 31 participants were recruited, all of low social-economic status, receiving support from civilian associations working with migrants and/or from governmental institutions with the same aim. Connections were made with the support of the Municipal Department of Studies of Porto – GEP. Eleven women were born in Portuguese-speaking African countries (three in Cape Verde, three in Angola, four in Sao Tome and Principe, and one in Guinea), seven in eastern European countries (six in Ukraine and one in Russia), seven in Brazil, and six were Portuguese natives.

The sample was purposive, gathered by an intentional referral process. Participants were recruited between November 2011 and February 2012 if they met the following inclusion criteria: recent mothers with children under the age of 36 months, living in the metropolitan area of Porto. They were recruited in civilian associations and non-governmental organizations (NGO's) located in Porto and its metropolitan urban region. The definition of immigrants as "whose parents were not born in Portugal" was applied, with availability and interest in participating in research.

It is usually in the first 36 months of life that children require more attention, from a psychosocial point of view, because of the need to monitor the achievement of a series of developmental stages. This period is also critical for the mother's emotional health and her adaptation to motherhood (90, 108). It was also chosen to allow a better recall of the access and use of healthcare services during pregnancy, as well as a more critical and detached assessment of the quality of healthcare (9, 20, 124).

Approval for the conduction of the study was obtained from the Governing boards and from the Ethics Committee of all involved institutions.

Procedure

Semi-structured interviews were conducted on all recruited women (please, see Annex I), evaluating the perceived needs and cultural challenges that potentially influence the perceptions of migrant population (50), and that determine health demand, adherence to treatments, effectiveness of health advice and inequalities in health (125). In this situation, qualitative methods allow the collection of data that quantitative methods are unable to uncover, and are especially relevant to strengthen a patient-friendly medicine that can

minimize inequalities and negative impacts from social variables (125). The methodology and general objectives of the study were explained to all participants, authorization for audio recording of the interviews was requested, and compliance on informed voluntary consent was registered. Open-ended questions were used, data recording was accomplished by a digital voice recording and note taking to facilitate latter transcription and content analysis. Interviews took place in the association or institution where the women were recruited and its duration was about of 25 minutes. They were conducted by a well-trained researcher, graduated in psychology. No refusals were disclosed.

Analysis of data

Techniques of qualitative content analysis and categorization of emerged information were used to make a systematic analysis of collected data, which involved transcription of interviews and field notes (126). Subsequently, a comprehensive interpretation of the resulting information was performed. Initial categories were created (corresponding to the questions made) and later evolved with the analysis of new data (clustering of information) (please, see Annex II). Two independent investigators coded and organized data according to these categories, and the research team met several times to establish agreement on interpretations. To maintain confidentiality, socio-demographic data were entered into a coding sheet, and the name of the participant replaced by an alphanumeric code.

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Instruments

✓ Guidelines for semi-structured interviews (Annex I);

Results

The results of the Qualitative Study are presented in Papers II and III (please see the Results section). Socio-demographic data of the sample is presented in Annex III.

Quantitative Study

Sample

A cross-sectional study was planned. Participants were immigrant and Portuguese recent mothers residing in Porto urban area. The administrative databases of the four public maternity hospitals in the Porto metropolitan area (Hospital de S. João, Centro Hospitalar de Vila Nova de Gaia e Espinho, Centro Hospitalar do Porto, and Hospital Pedro Hispano) were searched on a weekly basis between February and December 2012, in order to identify all births that occurred from immigrant mothers. The latter were defined as women born outside Portugal whose parents were also born outside Portugal, irrespective of their documentation

status. Portuguese women in similar stages of postpartum were also contacted through the same hospitals. As the real proportion of immigrants is unknown (due to undocumented stays in the country and lengthy legalization processes), migrants are frequently underestimated. Therefore, we choose a 1:2 sampling to ensure migrants were sufficiently represented in our sample (regarding the proportion of their nationalities in national territory), and mainly to ensure adequate statistical power (considering a lower number of migrants when compared to Portuguese-native women). Proportionally, they are over-represented. The heterogeneity and small size of migrant communities often displays an additional challenge to these studies; therefore, over-sampling is frequently required in surveys to yield statistically relevant information (46).

Procedures

Approval was gathered during 2011 among Executive and Ethics Committees of all institutions (the research team had previously communicated with the Board of Directors in order to reinforce informal endorsement) (please see Annex IV). In all institutions, the Clinical Director of Obstetrics and Gynaecology was contacted and involved in the research project. The monitoring of consent, compliance and interest in participating in the study was made through this coalition.

In the 3-4 weeks following delivery, one of the researchers (LA) telephoned to immigrant and Portuguese women. Participants were considered non-responders if they failed to answer three telephone calls (Immigrants=18, Portuguese=33). Of those answering the telephone, they were excluded from the study if they reported residing outside the Porto metropolitan area (Immigrants=7, Portuguese=3), if they referred having had a multiple birth (Immigrants=3, Portuguese=8), or if they were adolescents indicating that they were giving the baby up for adoption (Immigrants=0, Portuguese=3). All remaining women were explained the aim of the study, informal consent to participate was requested by phone, and the researcher attempted to schedule a visit to the participant's home, or elsewhere of convenience for her, in order to answer a written questionnaire. The scheduling of home visits followed a few criteria pre-established by the research team in order to measure defined objectives appropriately: home visits have never been scheduled during the first month after birth for being a particularly sensitive period of women's adjustment to the baby and their (new) role of mother, where postpartum blues is common; additionally, in an attempt to reduce recall bias, the visits never occurred after the third month postpartum.

From the total number of women selected from hospital records during the study period, 83.18% of immigrant mothers answered the phone, agreed to schedule a visit, and were visited, while this occurred in 85.07% of Portuguese mothers. A total of 277 answered questionnaires were obtained, 89 from migrants and 188 from native Portuguese women.

During home visits, carried out by a single researcher, each participant received written and oral information on the study, and written informed consent to participate was obtained (please see Annex V). Mothers were asked to fill in the questionnaire with the researcher present, and whenever doubts about a question arose or a delay in response was noticed, the items were explained. Obstetrical data were complemented and confirmed with information from the mother's pregnancy health book, a record of prenatal and intrapartum clinical data that is given to all pregnant women in Portugal.

Analysis of data

Collected data was organized and coded into a database created in IBM.SPSS.Statistics software, version 19.0 (Chicago, Illinois, United Stated). Regarding socio-demographic data, categorical variables were analysed by the Chi-square or Fisher's test, while continuous variables were evaluated using Student's t-Test (Annex VI).

Later, we conducted a univariate analysis (t-Test and Chi-Square or Fisher's test) to compare scores for mental health, perceived stress, social support and postpartum depression in migrant and Portuguese women, as well as to analyse several variables of interest (please see Paper IV in Results section; for further information, see Annex VII).

Conceptual and statistical criteria were used to construct subsequent multivariate models (logistic regression), adjusting for variables frequently associated with pregnancy and postpartum complications: preterm birth and/or low birth weight babies, smoking habits before and during pregnancy, obstetric complications (e.g. gestational diabetes and hypertension disorders, baby malformations, previous stillbirth and/or neonatal death, three or more spontaneous miscarriages), maternal age and previous health conditions' diagnose (e.g. anaemia, depression, hypertension), among others (as we will further describe). The models beheld all variables that in the univariate analysis met the criterion $p<0.2$, or if they were judged to be clinically or conceptually relevant to accomplish the aim of this study: to assess the role of "being a migrant" in the frequency of self-evaluated stress, depression, impoverished mental function and perceived low social support at postpartum (please see Paper V in Results section; for further information, see Annex VIII).

Instruments

The same instrument was used for these groups of immigrant and Portuguese women. It was introduced in the form of a battery of questionnaires administered by an interviewer after the birth of the baby, in the defined period. The instrument was extensively adapted and based on a previous questionnaire developed by the Institute of Public Health that was applied to the mothers in *Geração XXI* birth cohort. Only the mother's questionnaire was used. Questions about pregnancy, clinical history of the mother, maternal health,

antenatal care and postpartum attention were refined by clinical experts, and several items were introduced in order to capture sensitive information about migration. Other items were altered to adequately respond to specific objective regarding the assessment of social determinants of health.

Therefore, the questionnaire allowed data collection about a number of relevant topics: demographic and social conditions (socioeconomic status, education level, income, employment status and household composition), lifestyles and health behaviours, gynaecologic, obstetric and general medical history, characterization of prenatal care and postpartum medical attention, symptoms and co-morbidities prenatally and postpartum, cultural health habits and practices (when applicable) and migration specific issues. Additional data was collected through the following instruments:

- ✓ Perceived Stress Scale (Cohen, Kamarck & Mermelstein, 1983; adaptation and validation of Portuguese version: Pais Ribeiro, 2009).
- ✓ Mental Health Inventory 5 (Veit & Ware, 1983; adaptation and validation of Portuguese version: Pais Ribeiro, 2001)
- ✓ Scale of Satisfaction with Social Support (Pais Ribeiro, 1999).
- ✓ Edinburgh Postpartum Depression Scale (Cox, Holden & Sagovsky, 1987; adaptation and validation of Portuguese version: Augusto, Kumar, Calheiros, Matos & Figueiredo, 1996) after delivery (following the proposed recommendations defined by the Directorate General of Health) (please see Annex IX).

Results

The results of the Quantitative Study are presented in Papers IV and V (please see the Results section).

Grounds for instruments' selection

1) Qualitative semi-structured interview

Semi-structured interviews are the most commonly used strategies to obtain data for qualitative health research (125). Given the characteristics of the target population, the option for semi-structured interviews as a privileged technique for data collection, showed up as the most suitable, since it only required a single meeting and absolutely anonymous with each participant. This aspect is relevant since some of interviewed recent mothers were still in an undocumented status. Other strategies (e.g. focus groups, in-depth interviews, unstructured interviews) would imply not only longer meetings, possibly as more than a single moment of interview. Although other strategies would provide extremely valid and richer information, they are not always applicable and adjustable neither to the time

constraints of working migrants nor to concerns associated with multiple contacts to illegal migrants (125, 127).

Additionally, scientific literature unanimously points towards the major asset in using qualitative data to gather sensitive information and specific answers when considering a deep comprehension of human being options and attitudes. In the present research, one central goal regards the assessment of women's perceptions about the accessibility and quality of health services in public facilities during pregnancy and postpartum period. Since it's believed that their subjective perception interferes and, ultimately, may determine women' utilization patterns of the referred services, it is crucial to understand and evaluate people's subjective meanings, beliefs as well as background history and cultural facts that will help to better explore and respond to the objectives previously settled.

Semi-structured interviews have the advantage to permit the using of several guidelines with allocated open-ended questions about relevant aspects towards a holistic perspective of the required issue. Thus, its non-deterministic character also allows the introduction of the necessary items to better redirect the interview to aspects that may need further explanation or reflexion.

Single interviews were performed by a specialist researcher in communication (psychologist). As stated, qualitative semi-structured interviews allowed to deeply exploring social and personal issues emerging from the Migration topic. It helped to clarify the interference of personal experiences and social determinants in health status, underlying the value of a setting guided by a patient-friendly-medicine approach, especially regarding such a vulnerable life period among women.

2) **Perceived Stress Scale** (Cohen, Kamarck & Mermelstein, 1983; adaptation and Portuguese validation: Pais Ribeiro, 2009)

The Perceived Stress Scale (PSS) is, according to the authors, a global measure of stress. It is proposed to evaluate the degree to which an individual appreciates their life situations as stressful (1). PSS assumes a theoretical perspective that "the person actively interacts with the environment, assessing the events as potentially threatening or challenging in light of coping resources available" (1)(p. 386). In this perspective, the authors explain, the stressors reside not the event itself, but rather in the cognitive appraisal of the event, only if *a)* the situation is appraised as threatening and, *b)* if the personal resources to coping are insufficient. This perspective is shared by Richard Lazarus group study (2, 128).

Possible correlation values between pathology and PSS were found by other authors: Hewitt and colleagues (129) found correlations of 0.52 with the Beck Depression Inventory; Remor

(130) found correlation values with Scale Hospital Anxiety and Depression in 0.64 to part of anxiety, and 0.71 to full scale (2).

Thus, some of overlaps indicate that more than 50% of the variance of EPS is shared with classical measures of psychopathological symptoms. The authors state that "there is probably some overlap between what is measured by the scale of depressive symptoms and what is measured by PSS as perception of stress can be a symptom of depression" (1) (p.391) .

In the study with the European Portuguese version of Mota-Cardoso, Araújo, Ramos, Gonçalves and Ramos, (131) these authors assume that PSS is an "indicator of emotional disturbance" (p.64) (2).

Concept of Stress: a brief revision

Three main approaches can be distinguished in the conception and evaluation of stress: a) Focusing on the causes, b) centred on the consequences c) focusing on the process.

The first approaches are referred to as environmental, because they treat stress as a characteristic of the stimulus, as a load. This perspective considers the source of stress is in the event. More intense events origins higher stress.

The second approach to stress is biological, focused on a non-specific physiological response, or conceiving stress as a syndrome that comprises all physiological changes that occur in the biological system when this is affected by a stimulus. Stress is understood as an excessive or damaging response. It is the classic model of Hans Selye. The author defines stress as "the non-specific response of the body to any demand" (132)(p. 34). The term "non-specific response" means that the body responds in a stereotyped manner or similarly in a wide variety of different stimuli or agents such as intoxication, nervous tension, heat, cold, muscle fatigue or exposure to x-rays. This non-specific response would be common to all stimuli and all biological organisms. Stress and nonspecific reaction would be closely linked to the definition of Selye (2, 132). As he explains, "stress is the sum of non-specific biological phenomena (including injuries and fenders) and, consequently, a stressor agent is, by definition, not specific because it produces stress" (132)(p. 34). This reaction, which Selye defined as physiological, surely has concomitant psychological, emotional and behavioural expressions of those physiological reactions (2, 132).

The third approach or model is the psychological approach, focused on the dynamic interaction between the individual and the environment, and the subjective assessment of stress that is made by each person. To Lazarus and Folkman (1984), is the interaction between the environment and the individual who defines stress. This means that when the individual feels that the stress from the demands of the environment exceed the resources

that he or she states: the cognitive process that mediates evaluation and coping are central to the experience of stress (2, 128).

In summary, although Cohen and colleagues (1) advocate the latter approach, in fact, it seems that PSS evaluates the classical view of Selye: the perception of stress can be a symptom of depression. Regarding this issue, the author stated that in situations of stress, the body exhibited biochemical, physiological, and organic modifications, where the hypothalamic – pituitary – adrenal axis plays an important role. The reactions of the organism associated with this are, at their most basic, what we feel when faced with a stressful situation: the heart beats faster, breathing quickens, we start sweating, and we perceive and react to things exaggeratedly, among others. This mechanism is also associated with symptoms of depression and anxiety (2, 132).

Psychometric properties

Through principal component analysis (PCA) is clear that one factor explains satisfactorily the grouping of items. For this reason and because the EPS is conceptually held a one-dimensional analysis to a forced component, for the 13 items retained. This PCA of 13 items forced component shows that the solution explains 43.96% of the total variance in component loads between 0.51 and 0.86 over most 0.60 (Portuguese validation of the scale). The internal consistency (Cronbach's alpha) of the scale with 13 items is 0.88 (the original scale shows values for three samples of 0.84, 0.85 and 0.86), and item total scale correlations corrected for overlap vary between 0.44 and 0.80, with most correlations above 0.60. None of the items withdrawn contributed to increase the internal consistency of the scale (2). Finally, the correlation of PSS with the assessment of psychopathological symptoms (assessed using the *Centres for Epidemiologic Depression Scale Study*) is 0.76. A score above 26 (cut-off >26, maximum: 52) indicates distress (2).

Stress is a complex and ambiguous construct. The literature uses the term *distress* to encompass a mixture of anxiety and depression. Selye (1974) explained that early in his research that popularized the concept of stress, the term used was *distress* and that with their continued use eventually it lost the initial syllable to become stress. Stress is harmful or unpleasant (132). Disclosure of the biology stress arises after moving to psychology in several variants and several models. The ambiguity is accentuated because the stress is on the fringe of other pathological concepts such as anxiety and depression, post-traumatic stress disorder, among others (2).

In conclusion, the PSS is a short scale with adequate internal consistency for the present data according to classical test theory (classic test theory). It can be used as a

measure that focuses on the consequences of perceived stress, and in reading the various issues identified with ease predominant focus on more emotional aspects of emotional disturbance or distress (2). In the present thesis, its use is accurately and justified by the interest in assessing negative effects of perceived stress (due to migration?) in maternal health, and its interaction with the subsequent measure to be explored: maternal health outcomes, mental health, social support and postpartum depression.

3) **Mental Health Inventory 5** (MHI5 – Veit & Ware, 1983; adaptation and Portuguese validation: Pais Ribeiro, 2001)

Regarding Veit and Ware (5), the Mental Health Inventory (MHI) was first developed in 1975 as a measure to assess psychological distress and well-being in the general population and not just in people with mental illness. It was one of the instruments developed for the *Rand Health Insurance Experiment*, a field study designed to assess the health of the general population, according to the definition designed the 1948 by the World Health Organization (61). The MHI focuses on psychological symptoms of mood and anxiety and loss of control over the feelings, thoughts and behaviours. Later versions were developed under the MHI items, (such as the five items scale: MHI-5) integrate these questionnaires, assessing health or quality of life, or can be used alone (4).

There is no health without mental health: short revision

The Second Revolution Health emerged with a consequence, among others, of evidence: the main causes of mortality and morbidity were associated with human behaviour. This a comprehensive perspective included, beyond the action itself, antecedents, concomitants, and the consequent action such as Expectations, Beliefs, Motivations, Attitudes, Assignments, Personal reference variables (such as Self-Efficacy, Self-Concept, Self-Esteem), Locus of Control, among others. In the case of morbidity, these variables may be either dependent or independent variables in disease expression (4, 25, 61).

The growing importance of the public health system, with a focus on primary health care, disease prevention and health promotion, drew attention to the need of reverting to measures that differentiate people on the level of mental health, rather exclusively to evaluate the existence of psychopathology versus absence of psychopathology, since the overwhelming majority of people who attend the primary care have not mental illness (4).

Research has indeed shown the existence of a positive dimension (psychological well-being, positive mental health status) and one negative (psychological distress, negative mental health status) (4).

Ware, Manning, Duan, Wells, and Newhouse (133) in a study based on the population of the *Rand Corporation's Health Insurance Study* which included 4444 people

from six areas in six states in the United States, showed that the MHI predicted whether people would seek support from mental health services, and the intensity of services received. This showed the validity of the MHI as a measure of mental health. At the same time, indicated that expenses on mental health in people with lower mental health were more than three times higher than in the group with better mental health.

Psychometric properties

Based on this inventory five-item reduced version was developed, known as the MHI-5. This is a quick version that either is used alone as a screening test, and is included in other scales such as SF-36 (134). It includes items 11, 17, 19, 27 and 34 from the MHI. Several investigations have shown that the MHI-5 is a useful screening test in the assessment of mental health (4).

The MHI-5 was developed for the health assessment questionnaire used in the Medical Outcomes Study, both for the reduced form, the SF-20 as for the SF-36. It consists of five items that represent four dimensions of mental health (Anxiety, Depression, Loss Control Emotional Behavioural and Psychological Well-Being) (4, 134). These five items have, in the original study, a correlation of 0.95 and 0.92, with the total score of the version of 38 items developed for the Health Insurance Experiment. The Portuguese adaptation shows a correlation of 0.95 between the MHI-5 and the version of 38 items (4).

Inspection of the correlations between MHI and its dimensions (Full Scale, Anxiety, Depression, Emotional / Behavioural Loss Control, Positive Affect, Emotional Ties) which can join the two dimensions that result from the merger of five dimensions (Positive Well-being and Distress) show high or excessively high magnitude. This close relationship between dimensions can mean redundancy. The dimension "Distress" shows very high correlations with the dimensions that comprise it (Anxiety, Depression and Emotional / Behavioural Loss Control), explaining almost 90% of the variance of each. Distress is the dimension which best explains the overall result of MHI by keeping the standard full scale, and indicating, in both cases the prevalence of a negative dimension of mental health expressed by this scale. The apparent redundancy allows understanding why the smaller version – MHI-5 – presents results as close to the total of 38 scale items (4).

Construct validity was inspected by the correlation between MHI and its dimensions, as well as the MHI-5 with two types of scales: measures of self-reference and self-rated health measures. The Portuguese versions of the scale MHI and MHI-5 have relatively similar structures to the original version. In the composition of full scale, negative dimensions have more weight towards the final grade although this constitutes an improvement on the traditional scales of mental health assessment. The Portuguese versions can be employed

with the same property that was used with the original versions. Scores above 13 indicate a functional mental health (cut-off ≥13, maximum: 25) (4).

Since one of the aims presented in this thesis was assessing maternal health outcomes in a wide scope, MHI-5 was used because of it combined accurate psychometric properties with a short length scale, extremely user friendly taking the perspective of respondents as well as the investigator. Besides, it provides a relatively universal measure, possible to compare between countries.

4) Scale of Satisfaction with Social Support (Pais Ribeiro, 1999)

The final version of the SSSS consists of 15 expressions that are presented for self-fulfilment. The subject must indicate the extent to which agrees with the statement (if it applies to him or her), a Likert scale with five positions: 'strongly agree', 'agree mostly', 'neither agree nor disagree', 'disagree mostly' and 'strongly disagree'. To construct the items, a series of measures were used to express health, well-being or ill-being (through specific instruments and assessment scales, previously constructed and validated), closely linked to these variables: general self-concept, seriousness it attaches to the events of life, life events, assessment of general self-efficacy, general health, physical symptoms of malaise, mental health and general health perception (3).

Social Support: short revision of the concept

In classic literature social support is defined as information belonging to one of three classes: information leading the subject to believe that he is loved and that people care about him, information that leads one to believe that it is appreciated and that has value, information leading the subject to believe it belongs to a network of communication and mutual obligations (3, 135). Dunst and Trivette (1990) argue that social support refers to the resources available to individuals and social units (such as family) in response to requests for help and assistance (3, 136).

Cramer and colleagues distinguish perceived social support versus received social support. The first refers to the social support that the individual perceives as available if he or she needs it, and the second describes the social support that was received by someone (3, 137). Heitzmann and Kaplan (1988), in a review of the evaluation techniques of social support that are used in the context of health, found that the psychometric properties of the instruments reviewed were generally weak, and that the techniques evaluated different conceptions of social support (3, 138).

SSSS was built to measure existent satisfaction with social support, assuming that measures of perceived social support explain better health than the ones measuring tangible social support (3).

Psychometric properties

Principal component analysis was conducted and items with a load factor up to 0.40 have been selected. 15 items remained in the equation. The factorial solution chosen includes four factors explaining 63.1% of the total variance. The internal consistency (Cronbach's alpha) of the total scale is 0.85. The scales are empirically generated according to the constructs that items were generated and appear to measure the following aspects of social support: 'satisfaction with friends', with an internal consistency of 0.83, explaining 35% of the total variance , "intimacy", with an internal consistency of 0.74, and explains 12.1% of the total variance; 'satisfaction with family', has an internal consistency of 0.74 and explains 8.7% of the total variance; and 'social activities', with an internal consistency of 0.64, and explained 7.3% of the total variance. Scores above 30 indicate satisfaction with social support (cut-off >30; maximum: 60).

Social support is currently one of the main concepts in health psychology and social medicine (3, 23, 40, 90). Social support alleviates distress in crisis, can inhibit the development of disease, and when the individual is sick has a positive role in recovery from illness (139). In the specific context of health and disease, Kessler and colleagues explain that social support refers to the mechanisms by which interpersonal relationships, presumably, protect individuals from the deleterious effects of stress. This variable is very inclusive, encompassing a wide range of components and aspects, using very different assessment procedures (3, 139).

Despite its importance in health field, there is no uniformity in the way to evaluate social support, nor is it clear the relationship between the various strategies and techniques used to assess it. There are numerous techniques for evaluation, and each by itself consider the various aspects, components or dimensions, but neither in itself has included social support in its entirety (3).

For the distinguished role that this variable, as demonstrated, takes involvement in health status, it is important to evaluate it in order to accomplish the scopes of this thesis as objectively as possible. Thus, since the SSSS is considered in the literature an assessment scale of perceived social support, sensitive and valid for discriminating aspects relating to health, well-being, quality of life and illness, contemplating many dimensions, the choice of this instrument is justified. In addition to its validation for the Portuguese population, is the

fact that the instrument is reasonably little extensive, easy to quote as well as to respond and handle by participants and researchers.

5) **Edinburgh Postpartum Depression Scale** (Cox, Holden & Sagovsky, 1987; adaptation and validation of Portuguese version: Areias, Kumar, Barros e Figueiredo, 1996, and Augusto, Kumar, Calheiros, Matos & Figueiredo, 1996)

In 1987, Cox and colleagues developed the Edinburgh Postnatal Depression Scale (EPDS) for the identification of postpartum depression, in clinical and research settings. EPDS is a self-administered, 10-item scale based on previously available scales (Irritability, Depression, and Anxiety Scale – IDA; Hospital Anxiety and Depression Scale – HAD; and Anxiety and Depression Scale) and on items developed by the authors themselves (6, 7, 124, 140).

The use of EPDS is favoured because of the ease and speed of its administration. This has led to its use by health care professionals in community studies, especially for the investigation of potential cases of depression. The clinical and epidemiological value of the scale have been confirmed by several validation studies carried out in different countries, with both sensitivity and specificity in the 70-85% range, depending on the cut-off point (7, 124, 140).

Maternal health promotion during pregnancy: antenatal and postpartum depression

Epidemiological data regarding maternal and child health alert for a prevalence of 10% of depression in women during pregnancy. It is known that this disturbance has a high probability of persisting after delivery (40, 90, 140). The diagnosis is not always easy, since there is an overlap of symptoms common to a normal pregnancy and depression: fatigue, insomnia, changes in appetite and energy loss (124, 140). In the 2nd trimester of pregnancy diagnosis is easier because the woman tends to experience this period more positively (corresponds to the onset of maternal perception of foetal movements) (9, 90). Additional signs of invasive sadness, despair, crying and suicidal thoughts are warning signs that should never be ignored.

The prevalence of postpartum depression is even higher, reaching approximately between 12% and 16% of the mothers. This is the period of greatest vulnerability to develop mood disorders throughout the life cycle of women (9, 124). The prevalence of depression may reach 50% when in the presence of risk factors, particularly in cases of previous postpartum depression: social isolation and former history of depression. In the phenomenological sense, postpartum depression is similar to depression during any other period of life. However, postpartum depression can be more serious, since depression in this

period can have a negative effect on the health of both the mother and the new-born (9, 40, 42, 65, 124).

This emotional distress can arise from the moment of labour until the end of the first year of the child's life. Most cases occur from the 6th week of the postnatal period (9, 90).

Psychometric properties

EPDS was originally constructed as a screening instrument for postpartum depression, but the scale's authors and others propose that, using ≥ 13 as the cut-off point, the scale has high positive predictive value for diagnosing postpartum depression. In general, EPDS validation studies report high sensitivity and specificity, as well as high positive predictive value, both as a screening instrument and as a diagnostic test (7, 8, 140, 141). In short, several studies shown the validity of EPDS should be interpreted in light of the use for which it is intended. EPDS is adequate as a screening instrument using the ≥ 10 cut-off point (maximum: 30), especially among selected populations of mothers at high risk of postpartum depression. This cut-off was also used in the Portuguese validation of the scale (8). The clinical and epidemiological value of the scale have been confirmed by several validation studies carried out in different countries, with both sensitivity and specificity in the 65-96% range, depending on the cut-off point (8, 140-142).

EPDS is the scale most widely used worldwide for the study of postpartum depression. It has been translated into several languages and validated in different countries, which constitute a major asset in our research option (124, 140). The sensitivity and specificity was assessed to estimate the optimal cut-off score for several screening instruments, and authors compared the results with published cut-off scores (124, 140, 141). Chaudron and colleagues (2010) found that *Beck Depression Inventory II* (BDI-II) and EPDS presented optimal cut-off scores for major depressive disorder or minor depressive disorder lower than published guidelines (6, 141, 143).

Several findings suggest that the BDI-II, EPDS, and *Postpartum Depression Screening Scale* (PDSS) were equally accurate in identifying depression in low income women or in high-risk populations during the postpartum year (124, 141, 144). Paediatric practitioners who use the EPDS or BDI-II should be aware that the use of traditional cut-off scores may not be as accurate as previously thought (124).

Beyond the characteristics of the scale, already explored, and which justify themselves the scientific and methodological option of its use in this research; the EPDS integrates the Guidelines for Health Care, proposed by the General Directorate of Health (DGS) in the field of Promotion of Mental Health in Pregnancy and Early Childhood. The scale is presented in the referred manual as a diagnostic and clinical privileged tool in medical attention towards this population (9).

CHAPTER IV – RESULTS

PAPER I

NOTES FROM THE FIELD

Maternal Healthcare in Migrants: A Systematic Review

**Lígia Moreira Almeida · José Caldas ·
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Abstract Pregnancy is a period of increased vulnerability for migrant women, and access to healthcare, use and quality of care provided during this period are important aspects to characterize the support provided to this population. A systematic review of the scientific literature contained in the MEDLINE and SCOPUS databases was carried out, searching for population based studies published between 1990 and 2012 and reporting on maternal healthcare in immigrant populations. A total of 854 articles were retrieved and 30 publications met the inclusion criteria, being included in the final evaluation. The majority of studies point to a higher health risk profile in immigrants, with an increased incidence of co-morbidity in some populations, reduced access to health facilities particularly in illegal immigrants, poor communication between women and caregivers, a lower rate of obstetrical interventions, a higher incidence of stillbirth and early neonatal death, an increased risk of maternal death, and a higher incidence of postpartum depression. Incidences vary widely among different population groups. Some migrant populations are at a higher risk of serious complications during pregnancy, for reasons that include reduced access and use of healthcare facilities, as well as less optimal care, resulting in a higher incidence of adverse outcomes. Tackling these problems and achieving equality of care for all is a challenging aim for public healthcare services.

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Background

The most recent waves of immigration show the increasing feminization of this phenomenon. Migrant women frequently initiate the mobility process at a childbearing age, irrespective of individual motivations for leaving their countries. They are also frequently exposed to biological and psychosocial risks when confronted with new contexts, environments and lifestyles that tend to accentuate situations of social vulnerability [1]. In addition to the anxieties inherent to migration, there is scientific evidence suggesting increased vulnerability during pregnancy and the postpartum period [2, 3]. Stressors associated with the migration process may be particularly important after delivery, exacerbating psychopathological complications such as the postpartum blues, psychosis and depression [2, 4]. Several psychosocial risk factors have been

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described, and include lack of social support, recent life stresses (including factors leading to migration and the migration process itself), personality variables and feelings about pregnancy or parenthood. Social and physical environmental adversity have been associated with maternal stress and pregnancy and infant health outcomes including prematurity, low-birth weight and infant mortality [5]. Migrants also exhibit a greater risk of suffering from mental illness, including depression, schizophrenia and post-traumatic stress, as a result of specific psychosocial determinants [2, 4].

The issue of vulnerability acquires more alarming contours when there are barriers that hinder the access of migrant populations to health systems, such as those related to economic difficulties, language problems, mobility issues, legal status, healthcare provider's attitudes, and cultural differences [6–9]. It is therefore important to assess the determinants of maternal healthcare in immigrant populations in order to establish policies that better attend these women's requirements.

The aim of this paper was to review the existing scientific evidence on the access, use and quality of healthcare in migrant populations during pregnancy and the postpartum period, with particular emphasis on how this interferes with health indicators and outcomes. To our knowledge, this is the first review to contemplate these three prime aspects of healthcare in the obstetric population.

Methods

One of our goals was to provide and reinforce evidence on the major role of perceived needs, cultural knowledge and individual expectations (e.g. health literacy). These aspects potentially influence the subjective perceptions of the migrant population about health and care adequacy, affecting their request and adherence to treatment as well as health behavior advice [10, 11]. These elements provide noteworthy indications to expand the research field knowledge and clinical focus.

The Medline and Scopus databases were searched for original articles (excluding comments, editorials, reviews and guidelines), published between January 1990 and February 2012, with abstracts written in English, Spanish, French or Portuguese, using the following search sentence: (pregnant OR pregnancy OR postpartum) AND (migrant OR migrants OR immigrant OR immigrants OR emigrants) AND ("maternal health" OR "maternal care" OR "prenatal care" OR "postpartum care" OR "prenatal health" OR "postpartum health" OR "health services" OR "maternal health services" OR "health care" OR "prenatal health services" OR "quality care" OR "health care quality" OR "health services utilization" OR "health access" OR

"perinatal health" OR "perinatal care" OR "perinatal health services" OR "health outcomes" OR "health indicators" OR "health status" OR "reproductive health outcomes" OR "reproductive health indicators" OR "reproductive health status" OR "perinatal health outcomes" OR "perinatal health indicators" OR "perinatal health status").

A total of 854 articles were obtained. The abstracts were evaluated by one of the authors (LA) to select studies that met all of the following inclusion criteria: (1) related to migrant women during pregnancy or in the year that followed, (2) evaluating access, use and/or quality of care, (3) providing and evaluation of health outcomes and/or presenting comparable health indicators.

The following exclusion criteria were also defined: (1) articles in which participants were in a situation of forced migration, were refugees or asylum seekers; (2) articles where evaluation of health outcomes was not based on assessment of access, use and/or quality of care; (3) articles where outcomes were not explicitly resultant from maternal healthcare; (4) studies that did not have a control group, or comparable health indicators from the indigenous population; (5) studies in which the participants had preexisting health conditions, alcohol and drug abuse; (6) studies evaluating practitioners' views, experiences and perspectives.

After application of the inclusion and exclusion criteria, a total of 27 articles were retrieved for analysis. The full-text of these papers was read by one of the researchers (LA) to confirm that they were original studies. The reference list of all systematic reviews and/or meta-analysis related to the topic was checked manually in order to identify studies that may not have been retrieved using the defined search strategy. This yielded a further three papers, for a total of 30 included studies.

Data extraction was carried out independently by three researchers (LA, JC, DB) and discrepancies were resolved by consensus. When data from the same study was reported in different publications, only the more recent paper was selected. No quality scoring system was applied in this review.

Results

Table 1 provides a summary of the main characteristics and findings of the evaluated studies. Studies were mainly conducted in Europe, but some were carried out in the USA, Canada and Australia. Most countries where the studies were performed have specific legislation favoring universal access to healthcare during pregnancy [12–16].

The majority of studies point to a higher health risk profile in migrants [6, 8, 10, 11, 17], and this can be due to different contributing factors.

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Table 1 Main characteristics and findings of the studies included in the review

First author	Host country (region)	Country of origin (number)	Control group (number)	Type of study (sampling method)	Main findings in immigrant population (as compared to controls)
Bray et al. [17]	Scotland (Lothian)	Czech, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, Slovenia (n = 114)	Scottish (136)	Retrospective cross sectional (maternity case records)	No differences in total c-section or instrumental delivery rates. Lower elective c-section rate (6 vs. 10 %), higher epidural rate (65 vs. 50 %)
Chote et al. [14]	Netherlands (Rotterdam)	Morocco (208), Turkey (240), Cape Verde, Antilles (108), Creole Surinam (76), Hindustani Surinam (86)	Dutch (1242)	Prospective cohort	Higher rate of late entry into antenatal care in Cape Verdean (OR = 1.65; 0.96–2.82), Moroccan (OR = 1.74; 1.07–2.85), Dutch Antillean (OR = 1.80; 1.04–3.13), Surinam Creoles (OR = 2.04)
David et al. [18]	Germany (Berlin)	Turkey, Afghanistan, Pakistan, Arab countries of Northern Africa, Lebanon (n = 19,363).	German (121408)	Cross sectional study (hospital deliveries)	Higher rates of congenital malformations in neonates of primiparous women (2.5 vs. 1.8 %). Higher rates of less than 11 antenatal check-ups (55.2 vs. 45.3 %).
Eastwood et al. [5]	Australia (Sydney)	Other (n = 10,346)	Australian (n = 14,278)	Population–based cross-sectional study (nurse visit within 3 months of birth)	Higher rates of postpartum depression (OR = 1.7: 1.6–1.9 for EPDS > 9 and OR = 1.9; 1.7–2.1 for EPDS > 12,on univariate analysis)
Ekeus et al. [40]	Sweden (Stockholm)	Chile; Iran; Iraq; Poland; Finland; Somalia; Yugoslavia (n = 36,148)	Swedish (n = 383,188)	Population-based register	Lower rates of epidural analgesia during vaginal delivery for Yugoslavian (OR = 0.55; 0.53–0.58), Iraquian (OR = 0.71; 0.67–0.75), Turkish (OR = 0.87; 0.81–0.93), Chilean (OR = 1.63; 1.49–1.79), and Somali (OR = 0.53; 0.47–0.59)
El Reda et al. [35]	USA (Michigan)	Iraq; Lebanon; Yemen; Jordan; Syria; Israel; India; Jerusalem; Egypt; Palestine; Kuwait; Pakistan; S. Arabia, Bangladesh (n = 5,997)	US-born (n = 205,749)	Population-based register	Higher number of women with no prenatal care (1.1 vs. 0.7 %), lower rates of preterm birth (7.5 vs. 8.5 %).
Essen et al. [41]	Sweden	Sub-Saharan Africa (Somalia, Ethiopia, Eritrea) (n = 62)	Swedish (n = 113)	Population-based register (maternal deaths)	Higher number of intrapartum deaths considered avoidable (63 vs. 11 %), and neonatal deaths considered avoidable by adequate medical care (80 vs. 28 %). Antenatal death in relation to delivery and risk factors: OR (maternal disease) = 2.7 (1.1–7.4). Perinatal death from suboptimal factors: OR (antenatal) = 6.2 (1.9–20), OR(intrapartal) = 13 (1.1–166), OR(neonatal) = 18 (3.3–100).
Fedeli et al. [22]	Italy (Veneto region)	Eastern Europe, Africa, Asia, South America (n = 20,332)	Italians (n = 73,098)	Population-based registry (hospital discharge records)	Higher risk for complications of pregnancy (Ratio (antepartum hospitalizations) = 0.21 for regular migrants (RM), 0.24 for irregular migrants(IR) vs. 0.18 for Italians), miscarriages (Ration = 0.15 (RM), 0.35 (IR) vs. 0.16) and induced abortions (Ratio = 0.24 (RM), 0.81 (IM) vs. 0.13).
Ganann et al. [12]	Canada (Ontario)	UK, France, China, Spain, Portugal, Poland, Others (n = 519)	Canadian (n = 526)	Longitudinal cross-sectional	Higher rates of postpartum depression (11.2 vs. 6.7 % for EPDS ≥ 12.
Geltman and Meyers [23]	USA (Boston)	Haiti, Caribe, Central America, Cape Verde, Puerto Rico (n = 84)	US-born (n = 87)	Survey (Random, local population-based hospital admissions)	Less likelihood of initiating late prenatal care (16 vs. 30 %)

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Table 1 continued

First author	Host country (region)	Country of origin (number)	Control group (number)	Type of study (sampling method)	Main findings in immigrant population (as compared to controls)
Gould et al. [34]	USA (California)	Mexico(433825), India (12899)	US-born white (n = 506,365), US-born black (n = 104,888)	Population-based registry (birth certificates)	Prenatal care initiation (3rd trimester/none/unknown) among Indian = 3.4 %, Mexican = 7.1 % vs. US-White = 3.5 %, US-Black = 6.1 %. PTB is higher among US-born blacks (24.8 %), Indian (19.7 %) and Mexican (18.2 %) than in US-born whites (17.3 %). LBW is higher among US-Blacks = 12.5 %, Indian = 9.1 % and US-Whites = 5.7 % than Mexican = 5.2 %.
Janevic [28]	USA (New York)	Russia, Ukraine, Poland, Yugoslavia Republics (n = 23,790)	US-born (n = 232,797)	Population-based registry (hospital and birth database)	Higher rates of no prenatal care. (former Yugoslavia = 2.8 %, Russia and Ukraine = 1.2 %, USA = 0.7 %)
Jonkers et al. [27]	Netherlands (Leiden)	Group 1: Morocco, Turkey, Surinam, Dutch Caribe; Group 2: Eastern Europe, Middle East, Asia and Sub-Sahara African countries (n = 40)	Dutch (n = 10)	Qualitative study (intentional sampling conducted by obstetrician referral)	*Four obstetricians reviewed 20 of migrant cases:* 80 % sub-standard care; 31.25 % delayed care; Diagnosing delays: 50 % preeclampsia; 12.5 % uterine rupture; 6.25 % ketoacidotic diabetic coma.
Lansakara et al. [33]	Australia (Victoria)	Other (Non-English speaking background – NESB, n = 212)	Australians (n = 1,074)	Prospective cohort	*Higher depression rates in migrants for 2 weeks or longer (27.6 %, OR = 1.92 (1.3–2.8) vs. 16.7 %). Higher rate of LBW in migrants: 3,297 g (SD ± 629 g) vs. 3,417 g (SD ± 569 g).*
Malin and Gissler [30]	Finland (nationwide)	Nordic, Western, East.Europe, Baltic, N. African, S. Asian, Chinese, Somali, Vietnamese, African, Latin American (n = 6,532)	Finnish (n = 158,469)	Population-based registry (birth registry)	Migrants have more previous abortions (19.3 vs. 12.4 %), less c-section deliveries (18.2 vs. 19.7 %), higher rates of epidural analgesia (60 vs. 40 %), higher rates of LBW (3.8 vs. 3.4 %) and of being SGA (2.7 vs. 2.0 %) and register more perinatal mortality (5.7/1,000 vs. 5.1/1,000).
McDonald et al. [38]	USA	Hispanics (n = 5,105)	N-Hispanic white women (n = 22,608)	Cross-sectional	Higher rates of prenatal care after 1st trimester among migrants (29.3 %, RR = 1.3 (1.1–1.4) vs. 14.8 %) as well as self-reported morbidity during pregnancy: gestational diabetes = 10.3 %, RR = 1.2 (1.0–1.4) vs. 7.5 %; incompetent cervix: 6.5, RR = 3.1 (2.3–4.1) vs. 1.4 %.
Philibert et al. [31]	France	Sub-Saharan African, Asia, North and South America (n = 267)	French (n = 13,186)	Case–control study	Higher rates of postpartum maternal death (OR = 2.00; 1.42–2.80). For Sub-Saharan Africa (OR = 5.45, 3.29–9.00). Higher risk of dying from hypertensive disorder (OR = 4.58; 2.31–9.08) or infection (OR = 3.93; 1.17–13.15)
Puig Sola et al. [39]	Spain (Barcelona)	Central and South America, Magreb, Caribbean-Africa, Southeast Asia/ Filipinas, India/Pakistan, Eastern Europe, China, Others (n = 989)	Spanish (n = 993)	Retrospective cross-sectional (one hospital)	Higher risk for hospital admissions caused by infections (73 vs. 62.6 %) among migrants. Lower risk of LBW (3.8 %, OR = 0.17 (0.03–0.90) vs. 10 %) and PTB (11.1 %, OR = 1.98 (0.71–5.53) vs. 18.3 %) among migrants. Higher rates of pregnancy with poor or no prenatal care in migrant women: 14.7 %, OR = 2.58 (1.76–3.77) vs. 6.3 %.

Table 1 continued

First author	Host country (region)	Country of origin (number)	Control group (number)	Type of study (sampling method)	Main findings in immigrant population (as compared to controls)
Ravelli et al. [29]	Netherlands (nationwide)	African, South Asian, non-Western, Turkish/Moroccan (n = 93,691)	Dutch (n = 460,543)	Population-based registry	Higher rates of perinatal mortality among migrants: Turkish/Moroccan: 9.8, African: 13.9, S-Asian: 12.5, E-Asian: 6.6, Other n-West.: 11.4 vs. Dutch: 7.6). Important ethnic differences in LBW: Turkish/Moroccan: 6.1 %, African: 10.0 %, S-Asian: 14.3 %, E-Asian: 6.2 %, Other n-West.: 7.6 vs. 6.6 %. Important ethnic differences in PTB: Turkish/Moroccan: 5.6 %, African: 8.9 %, S-Asian: 9.5 %, E-Asian: 6.1 %, Other n-West.: 7.2 vs. 7.8 %.
Reed et al. [24]	USA (Colorado)	Other (n = 5,961 undocumented immigrants)	US-born (n = 112,943)	Retrospective (Medicaid database, birth records)	*Higher rates of late or no prenatal care in migrants: no PNC* = 1.7 % (vs. 1.0 %); 1st trimester: 52.0 % (vs. 83.3 %). More medical risk factors among migrants: Anemia: 7.7 (vs. 2.2 %), Gestational Diabetes: 2.7 (vs. 1.7 %). Lower rates of LBW (5.3 vs. 6.5 %) or PTB (12.9 vs. 14.5 %), and higher rates of labor complications: excessive bleeding (2.3 vs. 0.8 %) and fetal distress (8.7 vs. 3.6 %).
Reeske et al. [21]	Germany (nationwide)	Middle and Northern Europe/North America, Middle East/North Africa, Asia, Eastern Europe (n = 504,043)	Germans (n = 2,166,005)	Population-based registry	Higher rates of pre-eclampsia among German mothers (2.5 %) compared to Middle East and North African mothers (1.3 %) and Asian mothers (1.2 %). Higher stillbirth rate in Middle East and North African women (RR = 1.34 (1.22–1.55)). Asian (RR = 1.34 (1.02–1.65)) and Mediterranean women (RR = 1.14 (0.93–1.28)).
Reichman et al. [36]	USA	Mexico	US-born (NH, non-Hispanic) N = 2,412	Longitudinal cohort	Late onset of prenatal care among Mexicans (1st trimester: 42.8 vs. 55.3 % in NH-Whites, 44.8 % in NH-Blacks). Higher rates of gestational hypertension among migrants (OR = 2.87 (2.05–4.02)) and lower rates of gestational diabetes (OR = 0.62 (0.29–1.31)) and LBW (5.8 vs. NH-Whites: 12.4 %, NH-Blacks: 13.5 %).
Schutte et al. [20]	Netherlands (nationwide)	Western, Non-western, Surinam/Dutch Antilles, Turkey, Morocco, Other (Sub-Saharan Africa, Asia)	Dutch N = 289	Population-based registry (maternal deaths)	Higher rates of maternal mortality ration in N-Western women (20.7 %, OR = 2.1 (1.6–2.7)), Surinam-D.Antillean (26.2 %, OR = 2.7 (1.7–4.3)) and Others (34.1 %, OR = 3.3 (2.3–4.8)) vs. 10 %. Lower rates of pre-eclampsia as cause of death in migrant women (87 vs. 94 %).
Sosta et al. [15]	Italy (Brescia)	Eastern Europe, Asia, South America, Africa (n = 105)	Italians (n = 366)	Prospective study (one hospital)	Late onset of prenatal care among migrants: ≥ 12 gestational week: 35.24 (vs. 4.92 %). Higher rates of PTB among migrants: 13.6 %, OR = 1.37 vs. 6.2 %.

Table 1 continued

First author	Host country (region)	Country of origin (number)	Control group (number)	Type of study (sampling method)	Main findings in immigrant population (as compared to controls)
Johnelle Sparks [37]	USA	Non-Hispanic Blacks, US-born Hispanics, foreign-born Mexican, other Hispanics, Native American, Asian	US-born N = 7,800	Longitudinal Study-Birth Cohort	Higher rates of no care (Mexicans = 7.94 %, Asians = 4.55 % vs. NH-whites = 2.24 %) or inadequate prenatal care (Mexicans: 17.44 %, Asians: 8.28 % vs. NH-Whites: 6.28 %) and LBW (Mexicans: 3.07 %, Asians: 3.26 % vs. NH-Whites: 3.02 %) among migrants.
Stewart et al. [32]	Canada (Montreal, Toronto and Vancouver)	Others (n = 94 immigrants)	Canadian (n = 73)	Observational prospective study (hospitalization for giving birth)	Higher rates of postpartum depression (35.1 % vs 8.1 % for EDPS ≥ 10; OR = 4.58; —)
Sword et al. [16]	Canada (Ontario)	Chinese, South Asians, Portuguese, Polish, Jewish, Italian, Other (n = 393)	Canadian (n = 857)	Cross-sectional survey (vaginal birth to single live infant)	Higher rates of postpartum depression in migrants: EPDS ≥ 12: 15.1 %, OR = 2.27 (1.44–3.59) vs. 7.3 %.
Thurman et al. [25] Thurman and Janecek [26]	USA (Texas)	Hispanics, Others (undocumented migrants) (n = 332)	US-born N = 429	Cohort (record review of women delivering live born singleton at local University hospital)	Undocumented US residents who had vaginal delivery were less likely to receive a postpartum sterilization request (PPTL) than documented residents with the same delivery route (OR = 0.36 (0.21–0.61)). Higher rates of denied PPTL in migrants, documented and undocumented: Hispanics: 78.9 %, OR = 0.88 (0.54–1.44), Undocumented: 63.2 %, OR = 0.64 (0.42–0.98) vs. NH-Whites: 14.3 %, OR = 1.40 (0.8–2.45), NH-Blacks: 6.8 %, OR = 0.63 (0.27–1.49). (One-Year Follow-up) Within 1 year of delivery, 46.7 % of women that requested and didn't receive PPTL became pregnant. Those women were more likely to became pregnant than women in the control group (22.3 %), who did not request permanent sterilization. Among undocumented residents, 63.2 % didn't receive requested PPTL (OR = 1.51 (1.04–2.18)).
van Roosmalen et al. [19]	Netherlands (nationwide)	Africans, Surinam, Netherland s Antilles/West Caribbean, Turkey, Morocco, Somalia, other Sub.Saharan countries, Indonesia, Vietnam	N = 102 maternal deaths	Population-based registry study (maternal deaths)	Higher rates of substandard care resulting in maternal deaths, resulting from delay in recognizing symptoms (RR = 4.2; 1.3–3.9), delay in referral (RR = 5.1; 1.4–19.2), or inadequate antenatal care by midwife (RR = 7.8; 0.6–106.2).

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Some migrant populations appear to have a higher incidence of disease that can affect pregnancy and the postpartum period, particularly of anemia [18–20]. It is also noticeable that the rate of congenital malformations is significantly higher in some migrant collectives [18].

A recent study from Germany reported that access to healthcare services was similar for the majority of migrant women during pregnancy, therefore suggesting that observed differences were related to the quality and content of antenatal care [20, 21]. On the other hand, health outcomes and indicators tend to assume a worse expression when legal documentation has not been obtained. A study conducted in Sweden identified problems of access to care especially in illegal immigrants [13]. An Italian study corroborated this finding, showing illegal immigrants to be at a higher risk of teenage delivery, complications of pregnancy, miscarriages and induced abortions [22]. Other studies show that higher rates of anemia, excessive bleeding and fetal distress occur among the undocumented populations [23, 24]. Undocumented US residents were also less likely to receive requested postpartum sterilization after vaginal delivery (OR = 0.36 (0.21–0.61)), mainly due to the lack of funding, and more likely to be discharged from the hospital without birth control [25, 26].

Migrants may receive less optimal care due to inappropriate pregnancy strategies, inadequate medical treatment and miscommunication. Poor communication between women and caregivers can result in inadequate care because of undiagnosed symptoms or poor compliance with treatments. Migrant women often reported delays in receiving information on diagnosis and treatment [27, 28].

A lower rate of obstetrical interventions, can also be found in the immigrant population, such as planned caesarean sections, and epidural analgesia during labour [18]. German women had a significantly higher frequency of planned caesarean sections and migrants were significantly less likely to receive an epidural anesthesia during delivery [20].

Regarding the incidence of stillbirth and early neonatal death, one study from the Netherlands revealed a higher incidence among African, South Asian and other non-western women, but a lower incidence in other western or East Asian women. In women without risk factors, the ethnic risk differences in mortality were even more pronounced [29]. Other studies report excessive perinatal mortalities among African (29.6/1,000) and Somali women (12.2/1,000) [30].

A study conducted in France indicated that the risk of postpartum maternal death was twice as high for foreign women (sub-Saharan Africa, Asia, North and South America). The risk of dying from hypertensive disorder or infection was four times higher for immigrant women. Quality of care received by women who died was less often

optimal in immigrants (9.1 %) compared with French women (28.8 %) and therefore some of these deaths may have been preventable (25.5 vs. 12.7 %) [31]. Another study evaluating maternal mortality in the Netherlands, reported that substandard care was found to be more frequent in immigrant women. These findings were also detected in hospitals, especially in women who died from pre-eclampsia, that were less often operated on in an unstable situation and received insufficient treatment of complications more frequently than native women [20]. Maternal mortality related to pre-eclampsia was mostly caused by insufficient diagnostic testing when indicated, inadequate management, insufficient stabilization before transport to tertiary care centers, and failure to consider timely delivery [19].

Several studies conducted in the UK, Canada and Australia found that immigrant mothers were more likely to experience postpartum depression. In a study conducted in Canada, immigrants (35.1 %) were significantly more likely than Canadian-women (8.1 %) to score ≥10 on EDPS, and those that required it had lower social support scores than Canadian-born women [32]. One of the studies showed that immigrant women experienced significantly poorer psychological health compared to Australian born women and were at higher risk of depressive symptoms [5]. Although immigrant mothers had an equivalent level of contact with primary care practitioners in the first 3 months postpartum, they were less likely to be asked about their emotional well-being or about social or familial support [5, 16, 33].

Some studies paradoxically report better perinatal outcomes in the immigrant population. This has been described as the *healthy migrant effect* [23, 34–39]. Possible explanations for this finding are the positive influence of informal family networks [13, 18, 40] and healthier behaviors during pregnancy [37]. These results are mostly limited to Hispanics and Eastern European women that are compared with US-born residents [31].

Discussion

This systematic review is, to our knowledge, the first to investigate the core aspects of healthcare received during pregnancy by migrant populations: access, use and quality of care, evaluating their impact on healthcare procedures and indicators. Migrants pose specific challenges for obstetric management (e.g. late booking for antenatal care, fewer visits [10, 12, 17], increased rates of operative deliveries, suboptimal postpartum care, often due to a series of barriers to accessing health care services: clinic waiting times (considering substandard and frequently irregular work conditions), transportation (lack of financial

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support) or absence of qualified interpreters [11], and poor engagement with antenatal care services). There is substantial evidence that language barriers adversely affect access to healthcare, quality of care, patient satisfaction and health outcomes [13, 14, 16, 40].

Generalizing conclusions from a systematic review such as the present one has inherent limitations. The methodological quality of the evaluated studies differs considerably, as do the migrant and local populations evaluated. Main study samples lack representativeness, as this population is frequently found in adverse social conditions and in an illegal status, and it is therefore difficult to reach and to establish contact. Fear of being reported to authorities is a common problem [12, 15]. These characteristics necessarily hinder the quality of the investigations.

Seeking health care by migrant populations is probably affected by personal concepts of health and illness, health literacy, knowledge of how the health system works, financial aspects, and past experiences of care. Access can be affected by a number of barriers related to the lack of necessary professionals and facilities, need for long distance travel, communication between the care giver and the patient [30]. Poverty also plays an important role in shaping racial disparities in health outcomes in the general population. There is a pressing need for additional research to provide a deeper understanding of immigrant women's perceptions of individual, community and health system barriers to care in order to better meet their needs. Difficulties in communication are potentially dangerous, increasing the risk of delayed care or the risk of missing obstetrical interventions [30]. Professional interpreters should be available when language barriers occur.

Immigrants bring with them diverse epidemiological profiles, but most of all their cultural beliefs and practices, including those involving health and illness [33]. Special attention should also be given to knowledge and conceptions of the immigrant population, in order to improve healthcare use, particularly among women of African origin who consistently show poorer outcomes. Information on the danger signs associated with serious pregnancy complications probably needs to be better conveyed to these groups. Culturally sensitive strategies are necessary to increase awareness of relevant health and social support services in their communities. Public health education policies may need to target both women and the community in order to increase health literacy and the likelihood of seeking maternal care [12].

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PAPER II

ORIGINAL PAPER

Migrant Women's Perceptions of Healthcare During Pregnancy and Early Motherhood: Addressing the Social Determinants of Health

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Abstract Recent guidelines from the World Health Organization emphasize the need to monitor the social determinants of health, with particular focus on the most vulnerable groups. With this in mind, we evaluated the access, use and perceived quality of care received by migrant women during pregnancy and early motherhood, in a large urban area in northern Portugal. We performed semi-structured interviews in 25 recent mothers, contacted through welfare institutions, who had immigrated from Eastern European countries, Brazil, or Portuguese-speaking African countries. Six native-Portuguese women of equal economic status were also interviewed for comparison. Misinformation about legal rights and inadequate clarification during medical appointments frequently interacted with social determinants, such as low social-economic status, unemployment, and poor living conditions, to result in lower perceived quality of healthcare. Special attention needs to be given to the most vulnerable populations in order to improve healthcare. Challenges reside not only in assuring access, but also in promoting equity in the quality of care.

Introduction

Migrant women frequently initiate the mobility process before or during their childbearing age, irrespective of the individual motivations for leaving the country [1]. Once confronted with new contexts, they are frequently over-exposed to biological, environmental, and psychosocial risks, accentuating situations of social vulnerability [2–4].

The subject of vulnerability becomes more alarming when economic and other barriers are raised to healthcare. These barriers may hinder access to healthcare services, even in countries where they are theoretically accessible to all and free of charge. Difficulties related to working hours, mobility, language, legal status, as well as healthcare providers' attitudes are frequently reported [5, 6]. Recent research has uncovered information that helps to clarify the role of social determinants during illness [7–9], and

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suggests that, to understand the healthcare demands of immigrants, it is important to consider their needs, beliefs and behaviors inside host countries. Links exist between poverty, socioeconomic status, education and health outcomes, and their understanding is important in order to establish future strategies in public health [9–11].

To contextualize this study, basic information is provided on the structure of the National Health System (NHS) in Portugal, so as to allow a better comprehension of the challenges that it may pose to migrants. The system is based on the concept of free and accessible care for all. There are a large number of local Primary Healthcare Centers run by family physicians in urban and rural areas, and the system mandates first contact at this level, except in acute health conditions. For the latter, individuals have access to pre-hospital care and transport, or direct admission to emergency hospital services. Due to organizational limitations, not all individuals have an individually appointed family doctor, and may therefore be observed by other similarly qualified doctors. Specialized care takes place in public hospitals on the referral of the family physician. Primary Healthcare Centers also develop local actions for the promotion of health, prevention of disease, vaccination and rehabilitation, usually organized by nursing teams. Prenatal care in low-risk pregnancies is conducted in these Primary Healthcare Centers, while there are guidelines for the referral of pregnant women to specialized obstetric care [12].

The aim of this paper is to provide qualitative information on the access, use and perceived quality of care during pregnancy and early motherhood, reported by a group of immigrants in a large urban area in northern Portugal. Users' perspectives remain a sensitive indicator of the quality of care [7, 13–15], with the potential to identify potential problems in the system.

Methods

Sampling and Recruitment

Interviews were conducted with 25 immigrant and 6 Portuguese mothers, living in the metropolitan area of Porto. Participants were all of low social-economic status and receiving support from governmental or non-profit welfare institutions focused on migrants. Women were contacted through these institutions between November 2011 and February 2012, and were selected for interview if they had children under the age of 36 months. This period was selected because of its importance in child development, and in the mother's emotional state and adaptation to motherhood [12, 16, 17]. Eleven of the immigrant women were born in Portuguese-speaking African countries, seven in Eastern European countries and seven in Brazil.

Procedure

Semi-structured interviews evaluated the perceived needs and cultural challenges that affect the migrant population [7] and determine health demand, adherence to treatments, effectiveness of health advice, and inequalities in health [18]. The methodology and general objectives of the study were explained to all participants, authorization for audio recording of the interviews was obtained, and compliance on informed voluntary consent was registered.

Analysis of Data

One author (L.M.A) used techniques of content analysis and categorization of emerged information to make a systematic analysis of collected data, which involved transcription of all interviews and field notes [19]. After data collection, a comprehensive interpretation of the resulting information was performed. Initial categories were created and these later evolved with the analysis of new data. To maintain confidentiality, socio-demographic data were entered into a coding sheet, and the name of the participant was replaced by an alphanumeric code. Quotes were selected from women's' conversations in order to best exemplify the main emerging themes.

Results

Participant Characteristics

Participants' ages varied between 20 and 45 years. African women presented basic to medium levels of education (4–12 years of school attendance), and almost half were still in the process of legalization (45 %). Most women from Eastern European countries had completed higher education (86 %) and all were legalized. Most Brazilian women reported medium levels of education and legal status (86 %). Portuguese women also had a basic to medium level of education. The length of stay in the country varied between 2 and 20 years—45 % of African women were residing in the country for more than 12 years, 71 % of Eastern European women had lived in the country for at least 10 years, while 71 % of Brazilian women had lived for 7 years or less. It is noteworthy that 25.8 % of participants were unemployed at the time of the interview.

It was possible to group the collected information into four major themes: (a) health status, (b) access and quality of care, in comparison with the country of origin, (c) barriers and facilitators for the use of healthcare services, (d) perceived problems in the health system and suggestions for improvement.

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Health Status

Each participant was asked to evaluate her health status, and the majority of women rated themselves as very healthy, despite referring specific health problems, most of which had been overcome.

> as a child, my parents lived in an area where the Chernobyl nuclear power station accident happened. So I always received great attention from the doctors. I had compulsory check-ups every six months. (…) my problem is a very low hemoglobin level (Eastern European participant).

> The health problem I had was malaria. It seemed a curse, because I was always ill! (African participant).

Participants reported cases of anemia and hypertension, one case of malaria among African women, postpartum depression in an Ukrainian and a Portuguese woman, and one case of endometriosis and hyperthyroidism in Brazilian women.

Perceived health status did not suggest substantial differences between nationalities, with the exception of African women who reported infections in different locations (respiratory, hematological and vaginal).

Access and Quality of Care, in Comparison with the Country of Origin

All participants reported regular use of the NHS during pregnancy. Outside pregnancy, use was generally limited to hospital emergency services (especially among migrants) and specialty appointments, such as Pediatrics. Most women were globally satisfied with the healthcare services, in particular with care provided during pregnancy.

African women reported the use of both primary and secondary healthcare services. As they had the longest stay in the country, many of them had an appointed family doctor and reported regular attendance of Primary Healthcare Centers. Women from Eastern European countries and Brazil tended to use hospitals more frequently in the first years after immigration, and later to use them only for acute care situations or pediatric appointments, not trusting their children to family doctors. Two different perspectives were found among Brazilian women: some reported a more positive view of the healthcare system than that in the country of origin, while others expressed a similarity in the quality of public services. This seemed to be dependent on the geographical origin within Brazil.

> In Portugal healthcare is better. Public healthcare in Brazil is still very precarious. (Brazilian participant).

> In Brazil it was easier to obtain an appointment with a specialist. In a health center over there, you have daily access to all kinds of doctors! (Brazilian participant).

Brazilian and Eastern European women provided a more negative evaluation of the quality of Primary Healthcare Centers, due to the difficulties in scheduling appointments. However, they reported being as satisfied with the healthcare services as in their country of origin, with the exception of not having access to specialist appointments in primary healthcare settings.

> The way healthcare professionals treat you in Portugal is much more kind. For me the quality is similar. But here, a specialist appointment may take a year, and in the Ukraine… it could occur tomorrow! (Eastern European participant).

African women frequently reported more satisfaction with the service received in Portugal than in the country of origin, referring the greater availability of technical resources and trained professionals, as well as a greater development of Medicine.

All women, including Portuguese natives, mentioned difficulties in scheduling appointments, in both primary healthcare centers and hospitals, and long waiting times before appointments as factors that contributed to a negative evaluation of a system.

Barriers and Facilitators for the Use of Healthcare Services

Migrant women reported different opinions regarding potential barriers for the use of healthcare services, mainly related to their personal experience. Among the most relevant obstacles were the initial unawareness of the NHS, the difficulty in scheduling appointments, the waiting time for appointments, and a perceived indifference towards users, particularly in hospital emergency services.

Some unfulfilled expectations regarding the attitudes of healthcare professionals were reported by Brazilian and Eastern European women: a perceived strictness in contact with patients often triggered inhibition towards posing additional questions, clarifying issues, and returning for future complications.

> In Brazil, we're more comfortable with our doctors, they smile and are kind! Here sometimes we even feel nervous when talking to a doctor, as they are so serious! (Brazilian participant).

Eastern European women reported that doctors occasionally appeared unprepared to answer questions posed by their patients and uncomfortable in providing technical explanations or discussing health procedures with well-

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informed patients. Furthermore, they consistently reported a language barrier that hindered their understanding of clinical procedures. Several Brazilian women complained about the difficulties of requesting regular medical check-ups, revealing cultural differences towards preventive approaches. African women frequently referred the process of legalization as a barrier in access to healthcare.

> I think the main barrier was not having the healthcare users' card. (African participant).

In relation to aspects that facilitate the accessibility to healthcare, they were perceived by African women as relatively scarce, and only related to some health cooperation protocols between Portugal and their countries of origin. Brazilian and Eastern European women reported some facilitators, referring pregnancy as a period of privileged support, and the geographic proximity of Primary Healthcare Centers as an important asset. Having an appointed family doctor and being pregnant were widely recognized as facilitators, both by migrants and indigenous women.

Several African and Brazilian women identified difficulties caused by administrative staff and misinformation from healthcare professionals as the main obstacles to specialized care in the hospitals.

> I'm very satisfied with the healthcare services. (…) I was pregnant in 2009, and my baby died in hospital. And I do not know why he died. (African participant).

> I dońt have any problem in accessing the healthcare services. (…) in early pregnancy, I went to the doctor in my Primary Healthcare Center. The family doctor made my access to healthcare difficult. She said I had no right to prenatal care, since I had no social security number and did not order the routine exams that I needed. I could only get them too late… (Brazilian participant).

It is noteworthy that some Portuguese women also reported problems with the quality of care, in spite of not identifying them as such or not being aware of their impact.

> The final part of the delivery went very wrong, when they had to remove the placenta some remains where left inside… (Portuguese participant).

Perceived Problems in the Health System and Suggestions for Improvement

Some problems were reported by all users, regardless of nationality. Among them were the long waiting time for appointments, the difficulties in scheduling appointments, the reduced attention received from healthcare professionals particularly in hospital emergency services, and the unpreparedness of some administrative staff. Brazilian and Eastern European women predominantly referred the non-availability of specialist appointments in Primary Healthcare Centers, and difficulties in obtaining timely appointments in the absence of an appointed family doctor, insufficient length of appointments, and unsatisfactory explanations from healthcare professionals.

> I have been waiting one year for an appointment! (Psychology appointment requested because of post-partum depression) What if I was no longer here? Maybe I could have committed suicide! (Eastern European participant).

Suggestions for improvement focused on the need to provide a more user friendly healthcare and one that allows for intercultural differences.

> Appointments don't need to be more frequent, but longer! (…) Is a shame that we cannot ask more questions! (Brazilian participant*).*

Discussion

It is well recognized that immigrants, particularly women, often face difficulties of integration in their host countries, due to both personal and external barriers, but over time and across generations, the process is usually successful. The main contributing factors to this success are the length of stay, fluency with the local language, and an increasingly active social participation [6, 20].

Despite Portugal's sustained commitments towards improved integration of immigrants through legislation and funding, this study identified shortcomings related to aspects that are generally not covered by the law or that are derived from an erroneous interpretation of the latter. Persons who contact immigrants in their access to healthcare seem to frequently unaware of specific legislation.

Poverty tends to be associated with social exclusion and limited access to basic services, such as health and education [12]. Our study only evaluated women of low socioeconomic status, thus preventing comparisons with other groups. However, in other studies, social-economic status has been shown to have a more relevant impact on health than racial/ethnic differences [8, 9]. Cultural and ethnical differences in the recognition and interpretation of symptoms have also been reported by others, and this may also have an impact on the patterns of use of health services [21].

Several issues were identified in this study that need to be addressed by local policy makers. Among these were long waiting times for appointments; dissatisfaction with

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the attitudes and information provided by healthcare professionals, inadequate knowledge of legislation by administrative staff, and the perception of limited access to specialty care. Most of these aspects did not appear to be linked to cultural differences, and were also referred by the more educated women who requested a more active participation in the decision process.

Other aspects were perceived as a stressor because of different health practices in the country of origin. Differences in local guidelines for the management of pregnancy and early motherhood, as well as different policies in access to specialist appointments were often perceived as an example of inadequate healthcare. It is likely that such differences will persist in the future, and efforts may need to be directed to the appropriate clarification of their existence.

In summary, the results of this study suggest a need to change the focus from accessibility of immigrant women to healthcare, which seems to be largely guaranteed in Portugal, to ensuring the quality of care [7, 14, 22, 23]. We believe that this helps to clarify the role of social determinants of health in immigrant populations in urban areas, but recognize that further enlightenment on the individual impact of such determinants requires a larger sample size, using quantitative methodologies. Such a study is currently being carried out in the same geographical area.

Ethical Standard The study was approved by the Research Ethics Board of the School of Psychology and Educational Sciences, at the University of Porto. Approval for the conduct of the study was also obtained from the governing boards and Ethics Committees of all involved welfare institutions.

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PAPER III

Assessing maternal healthcare inequities among migrants: a qualitative study

Avaliando desigualdades de saúde materna em migrantes: um estudo qualitativo

Evaluación de las inequidades en salud materna entre los inmigrantes: un estudio cualitativo

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Considering pregnancy and motherhood as periods of increased vulnerability in migrant women, to characterize the healthcare provided to this collective, we sought to identify and understand patterns of satisfaction and demand of maternal and child healthcare, assessing women's perceptions about its quality. The study followed a qualitative methodology (semi-structured interviews) for collecting and analysing data (content analysis) and was conducted in Porto, the second largest city of Portugal. Participants were 25 recent immigrant mothers from Eastern European countries, Brazil, Portuguese-speaking African countries and six native Portuguese recent mothers (for comparison), contacted through social associations and institutions. Data suggests that healthcare depends not only on accessibility but especially on social opportunities. Equitable public health action must provide individuals and groups the equal opportunity to meet their needs, which may not be achieved by providing the same standard if care to all.

Equity in Health; Health Inequalities; Maternal Welfare; Social Vulnerability; Migration

Resumo

Considerando a gravidez e a maternidade como períodos de maior vulnerabilidade em mulheres migrantes, a fim de caracterizar os cuidados de saúde prestados, procurou-se identificar e compreender padrões de satisfação e procura de cuidados de saúde materna e infantil, avaliando as suas percepções sobre a qualidade deles. O estudo seguiu uma metodologia qualitativa (entrevistas semiestruturadas) para a coleta e análise de dados (análise de conteúdo) e foi realizado no Porto, a segunda maior cidade de Portugal. As participantes foram 25 mães recém-imigradas do Leste Europeu, Brasil, e países africanos de língua portuguesa e seis Portuguesas (para comparação), contatadas pelas associações e instituições sociais. Os dados sugerem que a saúde depende não só da acessibilidade, mas especialmente das oportunidades sociais. Ações equitativas de saúde pública devem proporcionar aos indivíduos e grupos oportunidades iguais para satisfazer as suas necessidades, que podem não ser alcançadas fornecendo o mesmo tratamento padrão para todos.

Equidade em Saúde; Desigualdades em Saúde; Bem-Estar Materno; Vulnerabilidade Social; Migração

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Introduction

Equity in healthcare has been demonstrated as a relevant factor in reducing disparities in health [1]. Equity in health depends not just on overlapping social factors that affect each other (e.g. social gradient, stress, social exclusion, education, unemployment, social support, ethnicity, among others) [2,3]. It relates to ethics and moral values of social justice, implying preparedness from public health policies and actions to address and bridge potential inequities created by the conditions that adversely affect the health of individuals and communities [4].

The scientific literature indicates how often migrants tend to be the most vulnerable population groups, especially women of childbearing age, that regularly show greater foetal and neonatal mortality, and more complications during pregnancy and postpartum [5,6,7,8]. Their health indicators are frequently worse, which is explained by interactions between socio-material deprivation factors aggravated by stressors involved in the migration process. Along with issues related to health literacy concerning pregnancy and its assistance, migrants often obtain poorer medical follow-ups [7,8,9,10,11]. Additionally, migrants' expectations about healthcare received during pregnancy commonly differ and conflict with the normative procedures of the host country [12,13,14]. In a moment of current intense reconfiguration of the European societal structure, due to the global economic crisis, Portugal is officially no longer a host country for immigrants [15] and has once again become a country that principally exports human capital. This transition is contributing to an increase in the pre-existing vulnerabilities of populations that were already underprivileged, namely the immigrants who stayed.

To contextualize our study, we provide basic information on the structure of the National Health System (NHS) in Portugal, in order to allow a better comprehension of the potential challenges that migrants (and their Portuguese counterparts, as controls) may face when encountering healthcare services. The system is based on the concept of accessible care for all that need it. With a large number of local primary healthcare centres run by general practitioners, it establishes a mandatory first contact at this level, except in acute health conditions. Due to organizational limitations, not all individuals have an individually appointed general practitioner, and may therefore be seen by other similarly qualified doctors available at the time. Specialised appointments take place in public hospitals upon referral by general practitioners. Prenatal care in low-risk pregnancies is conducted in primary healthcare centres, while there are national guidelines on high-risk features necessary for referral to specialized obstetric care [1]. It is worth noticing that Portuguese legislation contemplates free healthcare access during pregnancy, irrespective of the mother's documentation status.

Our goal was to verify whether there are differences regarding women's perceptions about quality and appropriateness of care received between immigrant and native women, during pregnancy and postpartum. We believe that the users' perspective still offers a sensitive quality indicator of received care [13,16,17,18], and helps to identify possible gaps emerging from budgetary restructuring in public health policies. Our study was conducted in Porto, the second largest city of Portugal.

Methods

This article relies on qualitative data. We believe that health research is much more robust if exploring the personal and subjective aspects of the user's perspective, essential for a global understanding of the social reality, which have real impacts in health status, care seeking, regular monitoring and treatment adherence.

Given the characteristics of the target population, the option for semi-structured interviews as the preferred technique for data collection, proved to be the most suitable methodology, since it only required a single meeting and guaranteed absolute anonymity for each participant. This aspect is relevant since the status of some of the mothers interviewed was as undocumented immigrants. Other strategies (e.g. focus groups, in-depth interviews, unstructured interviews) would imply not only longer meetings, but also the possibility of more than one interview session. Although other strategies would provide extremely valid and richer information, they are not always applicable and adjustable either to the time constraints of working migrants or to concerns associated with multiple contacts with illegal migrants [19,20].

We designed a specific protocol study in order to understand the role of being from a foreign country: in perceiving quality and adequateness of care. We also evaluated possible differences in medical attention and health outcomes between nationalities.

Participants: sampling and recruitment

A total of 31 participants were recruited, all of low social-economic status, receiving support from civilian associations working with migrants

and Portuguese individuals (NGO's) and/or from governmental institutions with the same aim. Approval for conducting the study was obtained from the Governing Boards and from the Ethics Committee of all institutions involved. The participants' recruitment process was initiated through contacts and meetings with the Governing Boards of the institutions and associations, after their approval of the study protocol. The interviews took place in the contacted institutions' locations, after study approval. The participants were recent mothers born in Portuguese-speaking African countries (11), in Eastern European countries (seven), in Brazil (seven), and six were Portuguese natives (acting as a comparison group, recruited in the same institutions), notified about the study and asked to participate in it. Participants were recruited between November 2011 and February 2012 if they met the following inclusion criteria: recent mothers (immigrants from the most representative countries residing in Portugal, and natives) preferably during the first year of a child's life, living in the metropolitan area of Porto. It is usually in the first months of life that children require more attention, from a psychosocial point of view, because of the need to assess the achievement of a series of developmental stages [5,21,22]. This period is also critical for the mother's emotional health and her adaptation to motherhood [23,24].

Procedure

Semi-structured interviews with similar guidelines were conducted on all women (migrants and natives), evaluating the perceived needs and cultural challenges that potentially influence the perceptions of the migrant population [13], and that determine health demands, treatment adherence, effectiveness of health advice and inequalities in health [20]. Interviews took place in the association or institution where the women were recruited and its duration was about 25 minutes. They were conducted by a well-trained researcher, graduated in psychology. The methodology and general objectives of the study were explained to all participants. Authorization for audio recording of the interviews was requested, and informed voluntary consent was registered. No refusals were disclosed.

Analysis of data

Qualitative content analysis and categorization of emerged information were performed to make a systematic analysis of collected data, which involved transcription of interviews and field notes [25]. Subsequently, a comprehensive in-

terpretation of the resulting information was performed. Initial categories were created (corresponding to the questions made) and later evolved with the analysis of new data (clustering of information). Some initial questions presented at the guidelines included: "Have you detected any issue in accessing family planning services at health centres?"; "How would you evaluate the healthcare you received during last pregnancy surveillance? What about the healthcare provided to your new-born?"; or "Did you notice any problem in attendance and / or in the connection established with health professionals? Please explain in what way, and what were the consequences (if they existed)?".

To maintain confidentiality, socio-demographic data were entered into a coding sheet, and the name of the participant replaced by an alphanumeric code. Quotes were chosen from women's dialogues to best exemplify the main emerging themes.

Results

Socio-demographic characteristics of participants

Participants were between 20 and 45 years old. African women presented basic to medium levels of education (frequency of four to twelve years of school), and almost half were still in the process of legalization. Most women from Eastern European countries completed higher education, and had regular documentation status. Most Brazilian women reported medium level education and legalized documentation. Portuguese women also had basic to medium level of education. Length of stay in the country varied between two and 20 years: five African women were residing in Portugal for more than 12 years, five Eastern European women had lived in Portugal for at least 10 years, and five Brazilian women had been in the country for 7 years or less. It is noteworthy that 12 participants were unemployed at the time of the interview.

The collected information emerged in three major themes: (a) maternal and child healthcare (i. pregnancy and postpartum; ii. baby follow up; iii. family planning and contraception); (b) strategies for managing difficulties; (c) quality and consequences of care by health professionals.

Maternal and child healthcare

Women were requested to express their experiences concerning medical appointments received during pregnancy, as well as monitoring

services throughout the postpartum period and subsequent follow-up of the baby.

• **Pregnancy and postpartum**

We observed that pregnancy surveillance is one of the clinical activities that was met with greater satisfaction, particularly among Portuguese women. Nevertheless, this satisfaction was rarely found for medical attention at postpartum, where the women (irrespective of nationality) reported a significant lack of social and affective support, reporting sentiments of abandonment by the NHS.

Despite generalized satisfaction, most immigrants report to have had severe reproductive disorders in previous pregnancies, whether they occurred in their country of origin or in Portugal.

African women consistently reported more complications during pregnancy, most of them already in Portugal: more infection, hypertensive disorders and gestational diabetes as well as more miscarriage, perinatal and neonatal death in previous pregnancies. "[my baby] *had a problem with blood... I don't know why he died because he was born well. He was in the hospital for two months and died. No one ever explained to me*" (African participant).

Brazilian women tend to report high satisfaction with care received during pregnancy. The difficulties they most identified refer to some unfamiliarity from physicians and administrative professionals about pregnant women's free access to healthcare, if undocumented. This has resulted in poor and later prenatal care for some Brazilian women. "*In early pregnancy, I went to the doctor and she made my access a bit difficult because she said I had no right to* [receive medical care] *since I had no social security number*" (Brazilian participant).

Women from Eastern European countries claim to be very satisfied with pregnancy consultations especially when they occurred in their hospital of reference, in specialized services. Since most of them are having their second child in the host country, they experienced some progresses over the years concerning medical attention, referring to the humanization of contact with health professionals, and have developed comprehensive skills about the functioning of the NHS. "*During the first pregnancy follow-up it was complicated because I had no family doctor. The second was very easy, and I liked* [the healthcare services] *a lot*" (Eastern European participant).

• **Baby follow-up**

Regarding medical care for infants, after being discharged from the hospital, several immigrants report difficulties in attaining sufficiently clear medical consultations. Those discourses were not found among African or Portuguese women, unless a family doctor was not allocated. On the other hand, Brazilian and Eastern European women report widespread dissatisfaction with baby follow-up when it was carried out in primary healthcare (by general practitioners), since in their countries paediatric services are provided at this level of assistance. This often triggers a higher request for Hospital emergency services. "*At the Health Centre there wasn't a paediatrician. So my daughter grew up without consulting a paediatrician! ...only the family doctor could request a consultation, I had no family doctor!*" (Eastern European participant). "*The family physician is... well, is good, but not for children!*" (Brazilian participant).

• **Family planning and contraception**

Family planning services are counselling and information services regarding all aspects of sexual and reproductive life of a couple, since the onset (planned or consummated) of sexual activity. They focus on health prevention and protection against diseases (explicitly through free provision of contraceptives) and women's biophysical preparation for pregnancy (e.g. planning early intake of folic acid). We observed that not all women are aware of the advantages of those services but, irrespective of nationality, the ones who use them are extremely pleased. We only identified one case of an African woman that reported a coercive attitude from the physician that allegedly attempted to impose on her a subcutaneous implant. "*How can I put one thing if I don't know what it was? She didn't even ask me for my opinion; she didn't ask me if I wanted it! The answer she gave me was 'Oh, it's for you not to become pregnant again'*" (African participant).

Nevertheless, the patterns of receptiveness and use of contraception were highly variable among women of different nationalities. During the interviews, we observed some cultural specificities among Portuguese and migrant women, and we would like to highlight the approach of Eastern European women regarding medicalization overall. These women tend to have a widespread opinion that Western countries use too much drugs, arbitrarily and for all purposes. When concerning contraception, the same posture is detected: they use contraception more rarely, are mostly autonomous in their selection

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and often prefer condoms or skin adhesives. It is noteworthy that these women find contraception a highly private subject, demonstrating a significant sense of embarrassment and decorousness around it, and not all women felt comfortable discussing it. "*For us it is not easy, we initially are very ashamed! In our country we do not talk, it's more intimate. I know people that took them home* [birth control pills, condoms] *and... just showed them, they didn't use them, you know?... bags of contraceptives as an exhibit in a museum!* [laughs]" (Eastern European participant).

Strategies for managing difficulties

With regard to potential barriers identified by the study participants, we intended to gather information about the level of proactivity and action oriented towards migrant and Portuguese women's strategies to overcome difficulties.

Among Brazilian women, only one woman mentioned that she looked for information about her rights when facing a setback in accessing maternal healthcare. We found Portuguese women at the same level of action: despite knowledge about the functioning of the NHS, Portuguese women of low socioeconomic status only carry out verbal complaints. In very serious situations or circumstances with a high probability of medical failure, they tend not to pursue official channels. "*When removing the placenta, doctors didn't completely eliminate the remains... And that made me develop an infection that forced me to stay hospitalized for a few days. I wasn't pleased ...but I didn't complain*" (Portuguese participant).

Eastern European women, as the most highly educated, were more prompt to be informed and to request medical evidence about their health, frequently claiming to have a shared decision about therapeutic resolutions. Those women report having major initial difficulties, not only being uninformed about the functioning of the NHS, but mostly with regard to key language barriers that they actively try to attenuate with the length of stay.

We also observed that some African women are likely to reveal language barriers when considering healthcare use and full comprehension about medical appointments that were not self-identified previously. "*...our Portuguese is different from here, and she* [the administrative worker] *spoke in a way that I didn't understand...*" (African participant).

Quality and consequences of care by health professionals

As evidenced above, Brazilian and African women assess very positively the healthcare provision that they received. However they tend not to identify potential sub-quality experiences, not relating them to subsequent adverse consequences. Some experiences emerged that compromise the quality of services received, screening obstacles posed by some health professionals (specifically in the content of the consultations). "*At the Health Centre I was told that I could not do my pregnancy follow-up there, because I changed my address. I was already three months pregnant! ...in the new Health Centre, I wasn't accepted... We had to go to the hospital*" (African participant).

We observed a more assertive position among Eastern European women when confronted about self-perceptions concerning quality and consequences of care. Several women pointed to the language barrier as a crucial personal gap. Regarding health professionals, these women report that many physicians demonstrate thoughtfulness and tolerance, but some confine themselves to a position of expertise, not looking to actively communicate with the user. This often leads to extremely harmful situations for these women, especially in a period of initial stay in the host country. "*My family doctor, she didn't ask me for a few tests, and I had a blood infection during pregnancy, which was not detected, I had a vaginal delivery and infected the baby... She was born and died nine hours later*" (Eastern European participant).

Eastern European women also argue that doctors frequently seem unprepared to answer well established questions by informed patients, not appearing to be comfortable in providing technical information or discussing clinical procedures with them.

Discussion

We can anticipate that equity in healthcare depends not only on accessibility but especially on social opportunities. Social risk is widely associated with socio-material deprivation and tends to be reflected in social exclusion to goods and services, including health and education [1,2,26]. Equitable public health action must provide individuals and groups the equal opportunity to meet their needs, which may not be achieved by providing the same standard care to all.

Scientific literature and medical history have been showing that the non-mastery of the dominant language determines less adequate

treatments and may result in increased risk of health complications [4,26]. Analysing our results, inequities in maternal health concerning immigrants were particularly observed in pregnancy outcomes, dramatically aggravated in previous pregnancies, both for the mother and the baby. We will further explore some examples.

Considering African women who consistently reported more complications during pregnancy, two women in our sample have lost a child in the first three months of life (while staying in Portugal) and one woman reported having a previous stillbirth at seven months of pregnancy in Cape Verde, evidencing an unquestionable higher risk profile. Nonetheless, they are often satisfied with medical care, demonstrating a largely passive attitude in the approach to healthcare professionals. This inaction tends to result in a perpetuation of unawareness and unaccountability for their health, unless it is sensitively counteracted by the healthcare professional.

Women from Eastern European countries demonstrated a more proactive attitude, claiming for themselves a substantial role in therapeutic decisions. However, personal life trajectories and individual experiences often put them in situations of poor pregnancy outcomes and at higher risk of medical lapses. One Russian woman in our sample reported a medical fault (due to language/communication barriers) severe enough to cause an early neonatal death; one Ukrainian woman expressed that she never felt comfortable with medical follow-ups here because doctors were unaware that she was radioactively contaminated by living near Chernobyl. They never asked her for her medical history, and she has always experienced her pregnancies with anxiety. In the absence of a degree of intimacy between doctor and patient, she opted not to attend prenatal care. She carried out her first ultrasound one month before the baby was born.

The failure to identify certain subliminal barriers (which are not explicit, but subtended – health beliefs and behaviours affecting the use of healthcare facilities, linguistic and social barriers, impoverished socio-demographic surroundings) to equity in clinical practice may result in negative health consequences. They suggest gaps not only in cultural competence by some health professionals but, ultimately, professional limitations in establishing communication and a proper understanding in approaching health behaviours and expectations (health literacy) in immigrants. In fact, health professionals must be alert, not letting themselves be deceived by apparent satisfactory health status (e.g. health migrant effect). Applying equal healthcare standards may constitute blind clinical tactics in the absence of comprehensive communication between doctor and patient.

Patients' perspectives are essential elements to assess quality of maternal and child care and must be taken into account by policy makers and health professionals [17]. We believe that good medical care needs to be an arrangement of clinical quality combined with proper communication, beyond mere access to services. The clinical relation between doctor and patient is the key factor to a successful therapeutic alliance, tackling background inequalities, encouraging compliance and additional differentiated care (if required) towards better therapeutic results.

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Resumen

Considerando el embarazo y maternidad como los períodos de mayor vulnerabilidad para las mujeres inmigrantes, y con el fin de caracterizar la asistencia sanitaria, se buscó identificar y comprender patrones de satisfacción y demanda de salud materno-infantil, así como la evaluación de las percepciones sobre la calidad de los mismos. El estudio siguió una metodología cualitativa (entrevistas semi-estructuradas) para la recogida y análisis de datos (análisis de contenido) y se llevó a cabo en Porto, la segunda ciudad más grande de Portugal. Las participantes fueron 25 madres, inmigrantes recientes de países de la Europa del Este, Brasil, países africanos de habla portuguesa y seis nativas portuguesas (para su comparación), contactadas a través de asociaciones e instituciones sociales. Los datos sugieren que la asistencia sanitaria no sólo depende de la accesibilidad, sino especialmente de las oportunidades sociales. Las acciones equitativas de salud pública deben proporcionar igualdad de oportunidades a las personas y grupos para satisfacer sus necesidades, que no se pueden lograr al ofrecer una misma atención estándar a todos.

Equidad en Salud; Desigualdades en la Salud; Bienestar Materno; Vulnerabilidad Social; Migración

Contributors

Acknowledgments

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PAPER IV

Ligia Almeida

Journal title: International Journal of Gynecology and Obstetrics Corresponding author: Mrs. Lígia Moreira Almeida Article title: Obstetrical care in a migrant population with free access to healthcare Manuscript number: IJG-D-13-01381R1

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Your revised IJGO paper has been preliminarily accepted. It will be checked through and copyedited in-house and we will contact you within a few weeks for any further clarifications prior to a final decision.

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First Page

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(6) Synopsis: Unsatisfactory interactions between immigrant women and staff may lead to less adequate prenatal care and to a higher number of intrapartum complications.

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Obstetrical care in a migrant population with free access to healthcare

Abstract

Objective: Pregnancy is an especially vulnerable period, particularly among migrants. We aimed to evaluate differences in obstetrical care between immigrant and native women in a country with free access to healthcare.

Methods: A cross-sectional study was carried out of immigrant mothers delivering in the four public hospitals of the Porto metropolitan area between February and December 2012, and Portuguese-native mothers of the following two deliveries occurring in the same institution. Participants were contacted by telephone during the first month postpartum to schedule a home visit and answer a written questionnaire: 89 (83%) of immigrant mothers and 188 (85%) of Portuguese mothers agreed to participate, for a total of 277 women included in the study.

Results: Immigrant women were more likely to have their first pregnancy appointment after 12 weeks of gestation (27% vs. 14%, p=0.011), and to have less than three prenatal visits (2% vs. 0%, p<0.001). They were also more likely to have a cesarean-section (48% vs. 31%, p=0.023), perineal laceration (48% vs. 12%, p<0.001), and postpartum hemorrhage (33% vs. 12%, p<0.001). Conclusion: Migrants were more prone to late prenatal care and to higher rates of intrapartum complications. Unsatisfactory interactions with healthcare staff may play an important role in these findings.

Introduction

Immigrants and ethnic minorities often have increased health risks and may receive less healthcare, when compared to native populations [1, 2]. Pregnant women are particularly vulnerable, since they accumulate the stress of the migration process with the demanding experiences of pregnancy and maternity [3]. It is commonly accepted that migration is a risk factor in obstetrical management [1, 4, 5], associated with increased rates of operative delivery and less adequate postpartum care. These differences may be due to existing barriers in access and/or engagement with the health services [6, 7]. Financial difficulties may also limit health contacts, whether it be due to travel costs or to the need to reimburse healthcare. Some governments have attempted to tackle the latter problem by eliminating

healthcare payments during pregnancy, both for legalized and non-legalized immigrants. This however may not be sufficient to assure equity in healthcare. The absence of qualified interpreters [2], and differences in cultural views towards health, health literacy, and health expectations, may lead to poorer prenatal care and less adherence to recommendations [4, 7-12].

Some studies report improved perinatal outcomes in immigrant populations, in spite of increased demographic and socio-economical risk factors, a phenomenon known as the healthy migrant effect [13-16]. This may be due to the protective influence of family networks or informal social support during pregnancy [3] and/or to healthier behaviors when compared to the native population [13]. This effect tends to fade with increasing time spent in the host country [6, 17, 18] and may mask more vulnerable subpopulations within the immigrant group, such as those with lower educational or social-economic status [19].

The main goal of this study was to evaluate possible differences in obstetrical care between immigrant and native women in an urban population where free healthcare is available to all during pregnancy, irrespectively of women's legal status.

Materials and Methods

The administrative databases of the four public maternity hospitals in the Porto metropolitan area (Centro Hospitalar de S. João, Centro Hospitalar de Vila Nova de Gaia e Espinho, Centro Hospitalar do Porto, and Hospital Pedro Hispano) were searched on a weekly basis between February and December 2012, in order to identify all births that occurred in immigrant mothers. The latter were defined as women born outside Portugal whose parents were also born outside Portugal, irrespective of their documentation status. To act as a comparison group, the two subsequent births registered in each of these hospitals to Portuguese native mothers were selected. The contact telephone numbers of all mothers were obtained from hospital records. Approval was obtained from the Ethics Committees of all participating hospitals.

In the 3-4 weeks that followed delivery, one of the researchers (LA) attempted to telephone all selected women. Participants were considered non-responders if they failed to answer three telephone calls (Immigrants=18, Portuguese=33). Of those that answered, they were excluded from the study if they reported residing outside the Porto metropolitan area (Immigrants=7, Portuguese=3), if they reported a multiple birth (Immigrants=3,

Portuguese=8), or if they indicated that they were giving the baby up for adoption (Immigrants=0, Portuguese=3). All remaining women were explained the aim of the study, were asked for informal consent to participate, and the researcher attempted to schedule a visit to their home, or elsewhere of convenience, in order to answer a written questionnaire. From the total number of women selected from hospital records, 89 (83%) of immigrant mothers answered the phone, agreed to schedule a visit, and were visited, while this occurred in 188 (85%) of Portuguese mothers. A total of 277 answered questionnaires were obtained.

During the home visits, carried out by a single researcher (LA - a Psychology graduate who was not involved in the provision of healthcare), each participant received written and oral information on the study, and written informed consent to participate was obtained. Mothers were asked to fill in the questionnaire with the researcher present, and whenever doubts about a question arose or a delay in response was noticed, the items were explained (both the questionnaire and the written information were presented in Portuguese, and described cautiously to all women). Obstetric data were complemented and confirmed with information from the mother's pregnancy health book, a record of prenatal and intrapartum clinical care that is given to all pregnant women in Portugal.

The questionnaire allowed data collection on demographic characteristics, socioeconomic status, education level, income and employment status, household and familial aggregate, lifestyles and health behaviors, gynecologic and obstetrical history, characterization of prenatal and intrapartum care, and complications of pregnancy and labor.

Free healthcare for all pregnant women, independently of legal status, has been offered in Portugal since 2009. There are a large number of local Primary Healthcare Centers run by family physicians, and the system mandates first contact at this level, except in acute health conditions. For the latter, individuals have access to pre-hospital care and transport, or direct admission to emergency hospital services. Specialized care takes place in public hospitals on referral of the family physician. Primary Healthcare Centers also develop local actions for the promotion of health, prevention of disease, vaccination and rehabilitation, usually organized by nursing teams. Prenatal care in low-risk pregnancies is conducted in Primary Healthcare Centers, while there are guidelines for the referral of pregnant women to specialized obstetric care [8]. National guidelines also exist on the number of prenatal visits, laboratory evaluations and ultrasound exams to be performed in low-risk pregnancy.

Data analysis was carried out using IBM.SPSS.Statistics version 19.0 (Chicago, Illinois, United States). Categorical variables were analyzed by the Chi-square or Fisher's test, while

continuous variables were evaluated using Student's t-Test, setting statistical significance at p<0.05.

Results

In the immigrant group, 48 women (54%) originated from Brazil, 23 (26%) from eastern European countries, and 18 (20%) from Portuguese-speaking African countries. The mean length of stay in Portugal was 7.35 years, with a standard deviation of 3.63 years. Legalization of the immigrant status was referred by 47 women (53%), while 36 (40%) said they were in the process of achieving this, and 6 (7%) remained illegal.

The main social and demographic characteristics of the study population are considered in Table 1. Maternal age was significantly higher in immigrants and the latter were also more likely to be multiparous and to have a family income below 1000€. Considering the years of school attendance, Portuguese women were equally distributed between 7-9 years (30%), 10-12 years (34%) and higher education (22%), while more migrants just completed 10-12 years of schooling (49%).

The main findings related to prenatal care are presented in Table 2. Migrant women were more prone to have their first pregnancy appointment after 12 weeks of gestation and to have less than 3 prenatal visits. Urinary infections and placental abruption were more common in Portuguese women, but no differences were found in deleterious habits or in the incidence of other pregnancy complications. No significant differences were also found in the incidence of diseases prior to pregnancy, such as depression, anemia, and dyslipidemia (data not presented in the table). On the other hand, immigrant women were more likely to be non-smokers before pregnancy (83% vs. 74%) and reported a higher incidence of previous adverse obstetric outcomes, such as spontaneous miscarriage, ectopic pregnancy, stillbirth or neonatal death.

The main findings related to intrapartum care are presented in Table 3. Migrant women were less likely to have a vaginal delivery and more likely to have a cesarean section, perineal laceration, and postpartum hemorrhage. No significant differences were found in the incidence of preterm delivery, low newborn weight or fetal malformations.

Table 4 presents the self-reported satisfaction with the support received from healthcare staff during pregnancy and delivery, discriminated according to the different professional groups. More immigrants were dissatisfied with the support given by administrative and medical staff

during prenatal visits. On the other hand, Portuguese women were more frequently dissatisfied with the support received from the nursing team during labor.

Discussion

This study shows that, even in settings where healthcare is free for all women during pregnancy irrespective of legal status, immigrants are more prone to late booking of prenatal care, to absent prenatal care, and to a higher rate of intrapartum complications. Unsatisfactory support from staff during pregnancy was more frequently reported by the migrant population, and this may have an influence in the previous findings.

The design of this study has several strong points, allowing an accurate selection of cases, and a timely scheduling of home visits. The inclusion of all public hospitals in the area is likely to have resulted in a good representation of the city's immigrant population, and the proportion of nationalities is very similar to that reported by the immigration authorities for the Porto area [20]. Hospitals within the same metropolitan area frequently differ in their representation of immigrant deliveries.

Questionnaires were filled in at participants' own pace and in surroundings that were familiar to them, in the presence of a Psychology graduate who was not involved in the provision of healthcare. This probably made participants feel safe enough to report both positive and negative aspects of healthcare, namely satisfaction with the support provided by staff. It may also have helped with the clarification of concepts and translation issues of the questionnaire. The absence of time constraints allowed the confirmation of pregnancy and delivery data from the mother's pregnancy health book.

One of the weaknesses of the study is the non-inclusion of births taking place outside state-owned hospitals. The home birth rate in the Porto district is under 0,3%, while private hospitals account for 13% of all births in Portugal [21] – thus, about 86% of all births in the Porto metropolitan area are likely to occur in one of the four public maternity hospitals participating in this study. Births in private hospitals are usually chosen by the more affluent families, so this is likely to have contributed to an underrepresentation of the higher socio-economical population in our sample.

Non-responders to telephone calls and those who declined home visits are another possible source of bias, as this may include women who cannot pay their telephone bills, women giving false telephone numbers at the hospital, those with a limited understanding of

Portuguese, and those who may feel uneasy in showing their living conditions. Cultural barriers and fear of being part of official statistics may also have driven undocumented immigrants away from the study. It is therefore possible that illegal immigrants are underrepresented in this sample.

Some of the analyzed outcomes are relatively rare in the obstetrical population, and the sample was probably insufficient to show differences in the incidence of many pregnancy complications. Several other studies indicate that reproductive complications tend to be higher among immigrants, namely anemia, hypertensive disorders, pre-term birth, low birth weight, congenital malformations, fetal and neonatal mortality [9, 10, 22].

It is difficult to understand why urinary infections and placental abruption were more common in Portuguese women. The overall number of women reporting these diagnoses was small, and so it may be a spurious finding. However, it is possible that the earlier start of prenatal care, and greater number of urine cultures (data not evaluated in this study) contributed to the first finding. Another possibility is the existence of differences in sexual behaviors and fluid intake habits [1, 10]. Immigrants may have not have reported these diagnosis because they were unsure about their meaning or they were not adequately communicated by healthcare staff.

The immigrant population was older and more multiparous, and these are both risk factors for postpartum hemorrhage. Increased age could also justify the higher rate of perineal lacerations [23]. The immigrant group had a large representation of women from Brazil, where a high number of previous cesarean sections may have occurred [24]. This could have been responsible for the higher rates of cesarean section observed in that group. Unfortunately, data on previous cesarean birth was not retrieved in our study.

Delayed access to prenatal care and reduced prenatal visits in the immigrant group suggests that there may be differences in health expectations related to prenatal care, unawareness of the conditions offered to immigrants, economic difficulties in accessing healthcare facilities, and/or perhaps reduced satisfaction with previous encounters with the system. Some of these findings have been reported in other studies [12, 22, 25]. Family income was significantly lower among immigrants, but the similarities between the groups in the number of second and third trimester prenatal visits and in attendance of parenthood classes (data not presented in the tables) suggest that delayed booking of the first appointment is the major finding in this population.

There may be a number of reasons for the increased dissatisfaction reported by migrants with the support from healthcare professionals during prenatal visits. Different expectations

regarding prenatal care, diverse professional roles in the country of origin, communication difficulties during these encounters, lack of knowledge of immigrant rights, and even inappropriate personal approaches from health professionals may have all played a role. Direct and indirect discrimination is recognized as an important source of disparity in healthcare [1, 10, 18], but one that is difficult for healthcare professionals to acknowledge.

The results of this study suggest that free access is only one of the aspects to consider when aiming to provide adequate prenatal care to the immigrant population. Further efforts are needed to guarantee that immigrants receive complete and timely information of their rights and the offers provided by the healthcare system, adequate translation services, and a sound anti-discriminatory culture. All of these are likely to be needed in order to provide a satisfactory equitable support during pregnancy and childbirth.

Future studies, with a sufficient sample to allow multivariate analysis, are needed to clarify whether the differences observed in the migrant population are independently associated with the migrant condition or whether they are dependent on the older age, higher proportions of multiparity or lower family income and maternal education of this group.

Conflicts of Interest

The authors declare to have had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis. The author also affirms total disclosure of any conflicts of interest involving the co-authors.

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Tables - Obstetrical care in a migrant population with nearly free access to healthcare

Table 1. Socio-demographic data

	Migrants (n=89)	Portuguese (n=188)	Total (n=277)	p
Maternal age *mean (sd)*	31 (4.72)	29 (4.66)	29 (4.77)	**0.001**[a]
Parity n (%)				**0.005**[b]
Primiparous	37 (42)	112 (60)	149 (54)	-
Multiparous	52 (58)	76 (40)	128 (46)	-
Marital status *n (%)*				0.720[b]
With partner	67 (76)	146 (78)	213 (78)	-
Without partner	21 (24)	41 (22)	63 (23)	-
Family income[1] *n (%)*				0.119[b]
<500€	26 (29)	34 (18)	60 (22)	-
500-1000€	39 (44)	75 (40)	114 (42)	-
1001-1500€	12 (14)	43 (23)	55 (20)	-
1501-2000€	9 (10)	25 (13)	34 (12)	-
>2000€	3 (3)	10 (5)	13 (5)	-
Family income *n (%)*				**0.018**[b]
≤1000€	65 (73)	109 (58)	174 (63)	-
>1000€	24 (27)	78 (42)	102 (37)	-
Maternal Education *n (%)*				**0.024**[b]
1-4 years	4 (5)	12 (6)	16 (6)	-
5-6 years	11 (12)	13 (7)	24 (9)	-

	Migrants (n=89)	Portuguese (n=188)	Total (n=277)	
7-9 years	15 (17)	57 (30)	72 (26)	-
10-12 years	44 (49)	64 (34)	108 (39)	-
Higher education	15 (17)	42 (22)	57 (21)	-

[a]T-student test   [b]χ² test or Fisher's exact test   sd=standard deviation

[1]Regarding Family income, when analyzing differences between classes, we considered that it would be useful to explore a new categorization of the variable, to counteract the possible lack of sample' predictive value when subdivided into 5 classes. Therefore, we also present the results of the new analysis below.

Table 2. Prenatal appointments, maternal habits and complications during pregnancy

	Migrants (n=89)	Portuguese (n=188)	Total (n=277)	p[b]
1st appointment >12 weeks *n (%)*	24 (27)	27 (14)	51 (18)	**0.011**
No. of prenatal visits *n (%)*				**<0.001**
<3	2 (2)	0 (0)	2 (1)	**-**
3 to 6	19 (21)	16 (9)	35 (13)	-
7 to 9	46 (52)	140 (75)	186 (67)	-
≥10	22 (25)	32 (17)	54 (20)	-
Smoking in pregnancy[c] *n (%)*				
Non-smokers	74 (83)	142 (76)	216 (78)	0.261
≤10 cigarettes	13 (15)	42 (23)	55 (20)	-
>10 cigarettes	2 (2)	3 (2)	5 (2)	-
Alcohol in pregnancy *n (%)*	0 (0)	3 (2)	3 (1)	0.554
Drugs in pregnancy *n (%)*	0 (0)	0 (0)	0 (0)	-

Gestational hypertension *n (%)*	9 (10)	24 (13)	33 (12)	0.545
Preeclampsia / Eclampsia *n (%)*	1 (1)	6 (3)	7 (3)	0.437
Gestational diabetes *n (%)*	14 (16)	26 (14)	40 (15)	0.647
Urinary infection *n (%)*	0 (0)	42 (22)	42 (15)	**<0.001**
Placenta praevia *n (%)*	0 (0)	8 (4)	8 (3)	0.058
Placental abruption *n (%)*	0 (0)	10 (5)	10 (4)	**0.033**
Previous adverse obstetric outcomes[2] *n (%)*	22 (25)	23 (12)	45 (16)	**0.009**

[b]χ² or Fisher's exact test   [c]mean of cigarettes/day

[2]Adverse obstetric outcomes in previous pregnancies (spontaneous miscarriage, ectopic pregnancy, stillbirth or neonatal death)

Table 3. Intrapartum care and complications

	Migrants (n=89)	**Portuguese** (n=188)	**Total** (n=277)	**p**[b]
Gestational age at delivery *n (%)*				0.116
Preterm	6 (7)	21 (11)	27 (10)	-
Term	83 (93)	161 (86)	244 (88)	-
Post-term	-	6 (3)	6 (2)	-
Delivery mode *n (%)*				**0.023**
Non-instrumented vaginal	35 (39)	95 (51)	130 (47)	-
Instrumental vaginal	11 (12)	34 (18)	45 (16)	-
Cesarean section	43 (48)	59 (31)	102 (37)	-
Fetal malformations *n (%)*	4 (5)	2 (1)	6 (2)	0.086

	Migrants	Portuguese	Total	
Newborn weight *n (%)*				0.181
2500-4000g	77 (87)	149 (79)	226 (82)	-
<2500g	10 (11)	25 (13)	35 (13)	-
>4000g	2 (2)	14 (7)	16 (6)	-
Post-partum hemorrhage *n (%)*	26 (33)	23 (12)	49 (18)	**<0.001**
	(n=46)	(n=129)	(n=175)	
Episiotomy[3] *n (%)*	27 (59)	57 (44)	84 (48)	0.091
Any perineal laceration[3] *n (%)*	22 (48)	15 (12)	38 (14)	**<0.001**

[b]χ^2 or Fisher's exact test

[3]Number of cesarean sections were excluded. "Any perineal laceration" refers to the documentation of a perineal tear of any degree, irrespective of an episiotomy having or not been performed.

Table 4. Maternal satisfaction with prenatal and intrapartum care

	Migrants	**Portuguese**	**Total**	**p[b]**
	(n=89)	(n=188)	(n=277)	
PRENATAL CARE				
Administrative staff *n (%)*				**0.005**
Unsatisfied	6 (7)	4 (2)	10 (4)	-
Indifferent	4 (5)	31 (17)	35 (13)	-
Satisfied	76 (88)	153 (81)	229 (84)	-
Nursing team *n (%)*				**0.036**
Unsatisfied	0 (0)	6 (3)	6 (2)	-

Indifferent	8 (9)	6 (3)	14 (5)	-
Satisfied	78 (91)	176 (94)	254 (93)	-
Medical team *n (%)*				**0.006**
Unsatisfied	6 (7)	3 (2)	9 (3)	-
Indifferent	8 (9)	6 (3)	14 (5)	-
Satisfied	72 (84)	179 (95)	251 (92)	-
INTRAPARTUM CARE				
Nursing team *n (%)*				**0.003**
Unsatisfied	0 (0)	6 (3)	6 (2)	-
Indifferent	8 (9)	3 (2)	11 (4)	-
Satisfied	81 (91)	177 (95)	258 (94)	-
Medical team *n (%)*				0.123
Unsatisfied	0 (0)	5 (3)	5 (2)	-
Indifferent	8 (9)	8 (4)	16 (6)	-
Satisfied	81 (91)	173 (93)	254 (92)	-

[b]χ^2 or Fisher's exact test

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PAPER V

Almeida LM, Santos CC, Caldas JP, Ayres-de-Campos D, Dias S. The impact of migration on women's mental health in the postpartum. (submitted to: Arch Womens Ment Health)

Title Page

The impact of migration on women's mental health in the postpartum

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Abstract

Purpose: Migrant women at childbearing age are recognized as especially vulnerable to mental distress. Our main goal was to evaluate mental health, postpartum depression, stress, and satisfaction with the social support in immigrant women during the first months after birth.

Methods: Through a cross-sectional study, immigrant and Portuguese-native women delivering in the four public hospitals of the Porto metropolitan area between February and December 2012 were contacted by telephone during the first month postpartum to schedule a home visit and fill in a questionnaire: 83.2% of immigrant mothers and 85.1% of Portuguese mothers were visited, for a total of 89 immigrants and 188 Portuguese women included in the study. The questionnaire included the application of four validated scales: Mental Health Inventory – 5 Edinburgh Postpartum Depression Scale, Perceived Stress Scale, and Scale of Satisfaction with Social Support.

Results: Immigrants had an increased risk of postpartum depression (OR=6.444, 95%CI=1.858-22.344), and of low satisfaction with social support (OR=6.118, 95%CI=1.991-18.798). There were no associations between migrant state, perceived stress and impoverished mental health.

Conclusions: Immigrant mothers have increased vulnerabilities in the postpartum period, resulting in an increased risk of postpartum depression and lesser satisfaction with the social support.

Keywords: mental health, oxidative stress, social support, postpartum depression, migrants.

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Introduction

The postpartum period is often difficult for the recent mother, as it requires large emotional and biophysical adjustments. Regardless of pregnancy as a normative period of a woman's life, the postpartum phase carries with it increased health risks. Minor problems consequent to delivery, such as constipation and afterpains resulting from uterine involution, may

combine with more severe conditions to decrease maternal well-being (Bunevicius et al., 2009; Eastwood, Phung, & Barnett, 2011; Rumbold et al., 2011; Schetter, 2011).

Several studies report that migrant women have a higher risk of complications during pregnancy and the postpartum period (Gushulak, Pace, & Weekers, 2010; Lindert, von Ehrenstein, Priebe, Mielck, & Bra¨hler, 2009; Rechel, Mladovsky, Ingleby, Mackenbach, & McKee, 2013). Being an immigrant or belonging to an ethnic minority is associated with a higher frequency of perinatal infection, increased perinatal and infant mortality, higher maternal mortality, greater number of preterm and low birth-weight children (Dias, Gama, Cortes, & Sousa, 2011; Dias & Rocha, 2009). Several studies indicate that about 20% of maternal deaths, directly or indirectly related to pregnancy, occur among women with scarce, delayed or non-existent prenatal care (Bray, Gorman, Dundas, & Sim, 2010; Hayes, Enohumah, & McCaul, 2011; Urquia, O'Campo, & Heaman, 2012).

Migrant women also present a greater risk for mental illness, including depression, schizophrenia and post-traumatic stress, as a result of the interaction of specific psychosocial determinants (Bunevicius et al., 2009; Eastwood et al., 2011; Thomsen et al., 2011). These factors are likely to increase vulnerability during pregnancy and psychopathological complications before and/or after birth - postnatal depression and psychosis (Bunevicius et al., 2009; Lindert et al., 2009; Rumbold et al., 2011). Migrant women frequently report sensations of insecurity, isolation, self-perception of affective deprivation from key relationships, longing for their own culture and family, strangeness to new cultural habits, linguistic challenges, religious differences, and sometimes even hostility and indifference from the local population (Bunevicius et al., 2009; Collins, Zimmerman, & Howard, 2011). Increased distress and anxiety frequently foster postpartum depression (Eastwood et al., 2011; O'Mahony & Donnelly, 2010; Schetter, 2011; Thomsen et al., 2011). The incidence of postpartum depression seems to be greater when the mother's social network (e.g. family and friends) and social support are weak (Eastwood et al., 2011; O'Mahony & Donnelly, 2010). Women who are isolated, displaced, depressed and without traditional references of support are more vulnerable to this condition (Rumbold et al., 2011; Schetter, 2011).

Several problems have been identified with the quality of healthcare provided during the postpartum period, such as delays in the initial contact when complications occur, and in the start of treatment, shortness of financial resources to contact the population, and lack of evidence-based maternity care (Gushulak et al., 2010; IOM, 2011). Some studies report that public health facilities offer scarce support during this period, and women have difficulty meeting their mental healthcare needs, even when healthcare is universally available

(O'Mahony & Donnelly, 2010; Sword, Watt, & Krueger, 2006). A previous study conducted in our region showed that some immigrant and native women are unsatisfied with the medical attention received during the postpartum (Almeida, Casanova, Caldas, Ayres-de-Campos, & Dias, 2013).

The main goal of this study was to determine the role of being a migrant in the frequency of self-evaluated stress, depression, impoverished mental function and perceived low social support during the postpartum, adjusting for other potential variables of interest. As the Portuguese national health system offers the same care to all women during pregnancy, irrespective of their documentation status, and has a very structured standardization of care, observed differences should theoretically be due to differences in the social support and quality of healthcare.

Materials and Methods

Sampling and Recruitment

A cross-sectional observational study was carried out. The administrative databases of the four public maternity hospitals in the Porto metropolitan area (Hospital de S. João, Centro Hospitalar de Vila Nova de Gaia e Espinho, Centro Hospitalar do Porto, and Hospital Pedro Hispano) were searched on a weekly basis between February and December 2012, in order to identify all births that occurred in immigrant mothers. The latter were defined as women born outside Portugal whose parents were also born outside Portugal, irrespective of their documentation status. To act as a comparison group, the two subsequent births registered in each of these hospitals to Portuguese native mothers were selected. The contact telephone numbers of all mothers were obtained from hospital records. Approval was obtained from the Ethics Committees of all participating hospitals.

Instruments and Procedure

In the 3-4 weeks following delivery, one of the researchers (LA) attempted to telephone all selected women. Participants were considered non-responders if they failed to answer three telephone calls (Immigrants=18, Portuguese=33). Regarding these refusals, a brief analysis on the narrow information that we could obtained allows to sustain with reasonable certain that those women do not present socio-demographic characteristics markedly different (e.g. maternal age, place of residence) from those who accepted to participate. Of those that answered, they were excluded from the study if they reported residing outside the Porto

metropolitan area (Immigrants=7, Portuguese=3), if they reported a multiple birth (Immigrants=3, Portuguese=8), or if they indicated that they were giving their baby up for adoption (Immigrants=0, Portuguese=3). All remaining women were explained the aim of the study, were asked for informal consent to participate, and the researcher attempted to schedule a visit to their home, or elsewhere of convenience, in order to answer a written questionnaire. From the total number of women selected from hospital records, 89 (83.18%) of immigrant mothers answered the phone, agreed to schedule a visit, and were visited, while this occurred in 188 (85.07%) of Portuguese mothers. A total of 277 answered questionnaires were obtained.

During the home visits, carried out by a single researcher (LA), each participant received written and oral information on the study, and written consent to participate was obtained. Mothers were asked to fill in the questionnaire with the researcher present, and whenever doubts about a question arose or a delay in response was noticed, the items were explained. Obstetrical data were complemented and confirmed with information from the mother's pregnancy health book, a record of prenatal and intrapartum clinical care that is given to all pregnant women in Portugal.

The questionnaire allowed data collection on demographic characteristics, socioeconomic status, education level, income and employment status, household and family aggregate, lifestyles and health behaviors, gynecologic and obstetrical history, characterization of prenatal and intrapartum care (e.g. complications of pregnancy and labor), and postpartum medical attention (e.g. co-morbidities, cultural health habits and practices (when applicable) and migration specific issues). Additionally, four specific validated scales were applied: *Mental Health Inventory – 5* (Pais Ribeiro, 2001; Veit & Ware, 1983), *Edinburgh Postpartum Depression Scale* (Augusto, Kumar, Calheiros, Matos, & Figueiredo, 1996; Cox, Holden, & Sagovsky, 1987), *Perceived Stress Scale* (Cohen, Kamarck, & Mermelstein, 1983; Pais Ribeiro & Marques, 2009), and *Scale of Satisfaction with Social Support* (Pais Ribeiro, 1999) (for a full description of these scales please see the supplementary material to this article – Online Resource).

Free healthcare for all pregnant women, independently of legal status, has been offered in Portugal since 2009. There are a large number of local Primary Healthcare Centers run by family physicians, and the system mandates first contact at this level, except in acute health conditions. For the latter, individuals have access to pre-hospital care and transport, or direct admission to emergency hospital services. Specialized care takes place in public hospitals on referral of the family physician. Primary Healthcare Centers also develop local actions for the promotion of health, prevention of disease, vaccination and rehabilitation, usually organized by nursing teams. Prenatal care in low-risk pregnancies is conducted in Primary

Healthcare Centers, while there are guidelines for the referral of pregnant women to specialized obstetric care. National guidelines also exist on the number of prenatal visits, laboratory evaluations and ultrasound exams to be performed in low-risk pregnancy.

Statistical Analysis

Collected data was organized and coded database using IBM.SPSS.Statistics software, version 19.0 (Chicago, Illinois, United Stated). Regarding socio-demographic data, the t-Test was used to analyze maternal age, and Chi-square to establish comparisons between migrants and Portuguese-native women regarding maternal education, income, parity and marital status.

Univariate analysis was performed (t-Test and Chi-Square or Fisher's test) to compare the scores for mental health, perceived stress, social support and postpartum depression in migrant and Portuguese women (data not shown). Conceptual and statistical criteria were used to construct subsequent multivariate models (logistic regression): the models beheld all variables that in the univariate analysis met the criterion $p<0.2$, or if they were judged to be clinically or conceptually relevant to accomplish the aim of this study: to analyze the role of being a migrant (comparing immigrants and native women) in the frequency of perceived stress, depression, impoverished mental functioning and perceived low social support at postpartum. The models were adjusted for variables that are frequently associated with pregnancy and postpartum complications: preterm birth and/or low birth-weight, smoking habits before and during pregnancy, obstetric complications (e.g. gestational diabetes and hypertension disorders, congenital malformations, previous stillbirth and/or neonatal death, three or more spontaneous miscarriages), maternal age and previous health conditions (e.g. anemia, depression, hypertension). For accomplishing the main objective of this study, we also added the variable "being a migrant".

In the calculation of the logistic regression model, for mental health evaluation, due to lack of cases in each category, the variable "gestational age" was removed, and smoking in 2nd trimester was replaced by smoking in pregnancy. For postpartum depression, to avoid collinearity, we opted to use the variable "low birth weight", removed the variable "preeclampsia", maintaining "gestational hypertension", and preserved the variable "depression prior to pregnancy". We also added the variable "marital status", because of the possible effect of living with partner on depression. For detection of stress, smoking in 1st trimester was replaced by "smoking in pregnancy" and in order to avoid collinearity, we used the variable "low birth weight", and removed the variable "preeclampsia" maintaining

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"gestational hypertension". Finally, for social support we added the variables "marital status", and "birth weight".

Results

In the immigrant group, 48 women (54%) originated from Brazil, 23 (26%) from eastern European countries, and 18 (20%) from Portuguese-speaking African countries. Mean length of stay in Portugal was 7.35 years, with a standard deviation of 3.63 years. Legalization of the immigrant status had been obtained in 47 women (53%), while 36 (40%) stated that they were in the process of obtaining legal status, and 6 remained illegal.

Additional socio-demographic data is presented in Table I. Maternal age was significantly higher in immigrants and the latter were also more likely to be multiparous and to have a monthly family income below 1000€. No significant differences between the groups were found in marital status. Considering the years of school attendance, Portuguese women were equally distributed between 7-9 years, 12 years and higher education, while more migrants only completed 12 years of school.

Table II displays the major influences on "perceived mental health". The variables with significant odds for an impoverished postpartum adjustment are episiotomy and multiparity. Mothers with medium and higher education had a reduced risk, and immigrant status was not a statistically significant factor.

Table III displays the major influences on "postpartum depression". The variables with significant odds are migrant status, history of depression in prior pregnancy, gestational hypertension, adverse obstetric outcomes in previous pregnancies, and smoking more than 10 cigarettes per day during pregnancy. Cesarean section, family monthly income above 500€, and smoking less than 10 cigarettes per day during pregnancy appear to have a protective effect against depression.

Table IV displays the major influences on "emotional stress". The variables with significant odds are episiotomy, adverse obstetric outcomes in previous pregnancies, diagnosis of non-gestational anemia, low birth-weight, and gestational hypertension. Smoking less than 10 cigarettes a day during pregnancy, and attending school during 10-12 years appeared to have a protective effect against stress. Immigrant status was not a statistically significant factor.

Table V provides the major influences on "satisfaction with social support". The variables that had significant odds are migrant status, previous diagnosis of depression, postpartum

hemorrhage, increased maternal age, episiotomy, multiparity and hypertensive disorders of pregnancy. Urinary infections during pregnancy and family monthly income above 500€ had a protective effect.

Discussion

Our results show that migrant status is associated with an increased odd of postpartum depression and of lower satisfaction with social support. On the other hand, it seems unrelated with perceived stress and mental health in the puerperium.

The design of this study has several strong points, such as the allowance of an accurate selection of immigrant women who participated, and a timely scheduling of home visits. The inclusion of all public hospitals in the area was decided to allow a good representation of the immigrant population, and the proportion of nationalities in the sample is very similar to that reported by the immigration authorities for the Porto area (Estrela, Machado, Bento, Martins, & Sousa, 2012). Hospitals within the same metropolitan area may differ in their representation of immigrant births.

Questionnaires were filled in at participants' own pace and in surroundings that were comfortable to them, with the support of a trained researcher (Psychology graduate) who was not involved in the provision of healthcare. The idea was for participants to feel safe in order to report both positive and negative aspects of healthcare, namely satisfaction with the support provided by staff. The absence of time constraints also allowed the confirmation of pregnancy and delivery data in the mother's pregnancy health book. The presence of the researcher was also intended to help women with the clarification of concepts and in translation issues when answering the questionnaire.

One of the weaknesses of the study is the non-inclusion of births taking place in private hospitals and in home settings. Nevertheless, these account for only about 12% of all births in the area and are usually only chosen by the more affluent families, as neither are funded by the state.

Non-responders to telephone calls and those who declined a home visit are a possible source of bias in this study, as they may include women who cannot pay to keep their telephones active, women giving false telephone numbers at the hospital, those with a limited understanding of the Portuguese language, and those who may be uneasy in showing their living conditions. Cultural barriers and fear of being part of official statistics may also have driven undocumented immigrants away from the study. It is therefore likely that illegal

immigrants are underrepresented in this sample. Regarding sampling, additional bias must be considered: 1:2 sampling approach does not ensure the representativeness of the exposure (migration) in population, but allowed to ensure a sufficient representation of migrants in the sample, not compromising representativeness of any group when considered separately (migrants vs. Portuguese); 1:2 sampling was adopted to ensure adequate statistical power as subsequent analyses or comparisons were considered important. Still, the limited sample size could have contributed to the lack of differences in the prevalence of preterm delivery, low-newborn weight and fetal malformations – found in other studies (Bray et al., 2010; Thomsen et al., 2011).

External generalizability of the results must be considered with some caution, because the cut-offs applied are only validated for Portuguese population (with no information for migrants). This aspect is inevitably present in every study with this target population, irrespective of the country where is conducted, but is still an important bias to consider. As regards sample size, our previous concerns were gradually surpassed as logistic regression models (its construction process) progressively showed robustness of associations and odds calculations. The most important effect of the small sample size can be found in the confidence intervals associated with each odds ratio: its large amplitude is uninformative about the actual magnitude of odds variation.

These results are consistent with previous studies that indicated more depressive symptoms and less social support among immigrant mothers when compared to Canadian natives (Ballantyne, Benzies, & Trute, 2013). Several other studies tend to associate postpartum depression risk, oxidative stress and frequent mental illness amongst immigrant mothers (Collins et al., 2011; Eastwood et al., 2011; IOM, 2011; Rumbold et al., 2011), as others identify the need to better study the role of social support in maternal health (Ballantyne et al., 2013; O'Mahony & Donnelly, 2010). Numerous studies show that immigrants and refugees are more susceptible to mental illness because of potential mental health stressors, such as pre-migration experience, intolerable memories, acculturation, unemployment, and structural characteristics of the new society that may conflict with previous experiences and habits [15]. Several studies confirm that maternal education is associated with reduced risk of mental health problems for mothers, as it fosters the development of resiliency, making individuals more prompt to continue functioning or return to functioning rapidly when facing a major life event, as being a new parent [4].

In an attempt to further explore in detail the obtained results, we will explore our major outcomes separately.

Regarding maternal mental health, explicitly the ability to maintain an adjusted mental functioning after delivery, we observed that several conditions and procedures contribute to deprive mothers' emotional, psychological and behavioral well-being, increasing anxiety, perceptions of losing control and discouragement (Bunevicius et al., 2009; Eastwood et al., 2011). However, some of these aspects do not follow any biological or medical reasoning, but respond to individual perceptions and subjective meanings attributed by women, assuming a genuine impact on their health. The major contribution found explaining possible further deterioration of maternal mental function is associated with episiotomies and multiparous mothers. Portugal is among the European countries that most uses episiotomy in vaginal deliveries (73%), far beyond the recommended 10% (EUROCAT, 2013). Thus, and upon increasing medical disagreement with respect to their potential effective, its use must be rethought as a causative agent of suffering and reduced quality of life in postpartum. When concerning multiparity, the association may report to a more psychosocial explanation: multiparous women seemed to report a worse individual mental functioning, that can result of an increased complexity of roles in the family (e.g. more demands in managing daily routines with other young children) and associated impending conflicts (it not only requires the reorganization of the marital system, but also that of the previously existing parental system) (O'Mahony & Donnelly, 2010). These results were previously found in other studies, where multiparous mothers report significantly lower levels of happiness and higher levels of anger than primiparous mothers (Gameiro, Moura-Ramos, & Canavarro, 2009). Maternal education above 10 years of schooling was found to play a major role regarding potentially protective effects to preserve an adjusted mental functioning after delivery.

When considering the variables that seem to contribute the most for developing postpartum depression, being a migrant is significant when the cut-off is above 10. Nonetheless, a possible misestimating of the load of migration into postpartum depression development still may be present, as well as in the remaining measured dimensions, as this and the other scales were provided to immigrant mothers in Portuguese. Therefore, maternal well-being and health may be over-estimated along the study, as translations provided in location may not assess with certainty the effect of migration in all these dimensions, attenuating its impact (as migrant responded less autonomously, when translation was needed, responding to an investigator in spite of self-filling the questionnaire potentiates inhibition of emotional expression, a social desirability). Our results also show that a previous diagnosis of depression (even if already overtaken at the time of the last pregnancy), adverse obstetric outcomes in previous pregnancies and obstetric complications during the last pregnancy (e.g. gestational hypertension) are scientifically recognized to induce accountable levels of anxiety and discomfort and to be associated with an increasing odds of postpartum

depression. Additionally, the association between excessive consumption of tobacco during pregnancy and the risks for maternal health is empirically understandable. This association, in this case, can also be foreseen as a hypothetic reverse causality, relying on the known association between smoking and mental illness - where smoking acts as an escape for relief of acute and generalized anxiety. Protective associations with no medical background support were also found: having a cesarean-section (not emergent or urgent) is perceived by the mothers as a less stressful and ansiogenic event than a natural delivery – which is totally consistent with the cultural belief that explains such a high proportion of cesarean-section procedures in the country (36.3%), despite lacking in medical sense [28]. Understandably, a family monthly income above the national minimum wage (485€) determines that women with more resources express a lower level of postpartum depression than those with fewer financial resources (Marmot & Bell, 2011).

Growing scientific knowledge is documenting the important contributions of stress in pregnancy to specific outcomes during pregnancy and birth. Stress exposures are being commonly accepted as relevant explanations to increased risk of preterm birth or having a low birth weight child (Schetter, 2011). As regards our results, chronic stressors like non-gestational conditions (e.g. anemia), obstetric complications in previous pregnancies (e.g. adverse obstetric outcomes like spontaneous miscarriage, ectopic pregnancy, stillbirth or neonatal death) and during last pregnancy (e.g. gestational hypertensive disorders) are key elements for perceived distress in postpartum period. Our results also may reflect the effects of oxidative stress during pregnancy, promoting postpartum perceived stress, namely through confirming the pernicious effect of having a low birth weight child. The same previous negative association was found regarding delivering through a cesarean-section and smoking less than 10 cigarettes per day during pregnancy (among smokers) as experiences that help reducing stress, confirming our explanation concerning personal perceptions and subjective meanings that influence health, irrespective of clinical sense. Maternal education seemed to play, again, a protective effect against distress as it enables focused action and adaptation to new family roles (Bunevicius et al., 2009; Collins et al., 2011; Rechel et al., 2013).

Lastly, when exploring social support, our findings are greatly consistent with the literature (J. Almeida, Mulready-Ward, Bettegowda, & Ahluwalia, 2013): being a migrant is the major contribute for having a low social support. This feeling of isolation and helplessness is aggravated by a previous diagnose of depression, being multiparous and having had pregnancy and intrapartum complications in last pregnancy (e.g. hypertensive disorders, episiotomy and postpartum hemorrhage). Regarding maternal age a deleterious effect may appear once migrant, who manifest an increased risk of poor social support, are themselves

older (and therefore more multiparous, accumulating two potential risks). Considering variables with latent protective influences, we found family income above 500€ has a major role – this aspect is consistent with the literature, since the concept of "social support" refers to the perceived resources available to individuals and implies the subjective assessment that each individual makes of self-value, both largely determined by social opportunities and networks, often interceded by family financial capability (Cohen et al., 1983; Pais Ribeiro, 1999). We also found a protective effect associated with having a minor urinary infection during pregnancy that, despite no medical sense or background, may be interpreted as likely to trigger objective and emotional support and care of family and affective network.

Conclusion

This study enables to reinforce several differences regarding social support and postpartum depression (often associated) between immigrant and Portuguese recent mothers. Being a migrant appears not to be a foremost element in explaining odds for distress and depleted mental health. Despite, as these dimensions tend to be implicated in an unclear chain of mental and emotional processes regarding motherhood, potential vulnerabilities should be considered clinical attention ought to be responsive to health expectations, literacy and associated needs. This is especially true at a postpartum moment, and not only for migrants, as several gaps have been identified regarding postpartum attention to women in public health facilities (J. Almeida et al., 2013; L. Almeida et al., 2013). As described above, the use of certain procedures (e.g. episiotomy) and standard clinical attention should be considered in addition to clinical recommendations and guidelines: also noticing the potential effects it will have on personal well-being, quality of life and maternal mental adjustment of women.

Clinical care is being based on "same care for all" more than equity, as socioeconomic and subjective individual experiences are achieving greater impacts in health (Marmot & Bell, 2011; Thomsen et al., 2011). We believe that those factors must be urgently integrated into medical care in order to reestablish social justice. This approach could be pertinent in helping to restore mental health in general (and maternal mental health in particular) as a priority in public health, nationally and worldwide.

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Ethical Approval of Studies and Informed Consent:

The present research was conducted in accordance with the Helsinki Declaration.

Conflict of interests: None to declare

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Tables - The impact of migration on women's mental health in the postpartum

Table I. Socio-demographic data

	Migrants (n=89)	**Portuguese** (n=188)	**Total** (n=277)	**p**
Maternal age *mean (sd)*	31 (4.72)	29 (4.66)	29 (4.77)	**0.001***
Parity n (%)				**0.005****
Primiparous	37 (42)	112 (60)	149 (54)	-
Multiparous	52 (58)	76 (40)	128 (46)	-
Marital status *n (%)*				0.720**
With partner	67 (76)	146 (78)	213 (78)	-
Without partner	21 (24)	41 (22)	63 (23)	-
Family income[1] *n (%)*				0.119**
<500€	26 (29)	34 (18)	60 (22)	-
500-1000€	39 (44)	75 (40)	114 (42)	-
1001-1500€	12 (14)	43 (23)	55 (20)	-
1501-2000€	9 (10)	25 (13)	34 (12)	-
>2000€	3 (3)	10 (5)	13 (5)	-
Family income *n (%)*				**0.018****
≤1000€	65 (73)	109 (58)	174 (63)	-
>1000€	24 (27)	78 (42)	102 (37)	-
Maternal Education *n (%)*				**0.024****
1-4 years	4 (5)	12 (6)	16 (6)	**-**
5-6 years	11 (12)	13 (7)	24 (9)	-
7-9 years	15 (17)	57 (30)	72 (26)	-
10-12 years	44 (49)	64 (34)	108 (39)	-
Higher education	15 (17)	42 (22)	57 (21)	-

*T-student test   **χ² test or Fisher's exact test   sd=standard deviation

[1]Regarding Family income, when analyzing differences between classes, we considered that it would be useful to explore a new categorization of the variable, to counteract the possible lack of sample' predictive value when subdivided into 5 classes. Therefore, we also present the results of the new analysis below.

Table II. Logistic regression model for Impoverished Maternal Mental Health (MHI-5, cut-off ≥13)

	OR adjs*	CI (95%)
Migrant**	0.163	[0.026; 1.030]
Maternal education		
1-4 years	-	-
5-6 years	0.708	[0.052; 9.550]
7-9 years	0.132	[0.010; 1.772]
10-12 years	0.021	**[0.001; 0.412]**
Higher education	0.007	**[0.000; 0.665]**
Family income**		
<500€	-	-
500-1000€	1.767	[0.280; 11.140]
1001-1500€	0.290	[0.034; 2.474]
1501-2000€	0.408	[0.017; 9.907]
>2000€	-	-
Parity (multiparous)	13.820	**[1.895; 100.789]**
Marital status** (living with partner)	0.214	[0.040; 1.148]
Adverse obstetrical outcomes** (previous pregnancies)	3.236	[0.516; 20.313]
Depression** (prior to pregnancy)	3.477	[0.331; 26.557]
Non-gestational anaemia**	1.108	[0.110; 11.203]
Smoking in pregnancy***		
Non-smoker	-	-
≤10	-	-
>10	5.568	[0.298; 104.044]
Delivery mode**		
Eutocic	-	-
Instrumented	0.543	[0.055; 5.400]
Caesarean section	1.284	[0.146; 11.252]
Metrorrhagia**	0.952	[0.192; 4.711]
Placenta praevia**	6.563	[0.299; 143.858]
Gestational hypertension**	3.490	[0.501; 24.294]
Episiotomy (only vaginal delivery)	116.660	**[10.021; 1358,087]**

*Odds ratio adjusted for all variables included (that met the inclusion criteria of p>0.2). Variables added: "being a migrant"; Variables removed: "gestational age".

**Absent from predictive model

***mean of cigarettes/day

Table III. Logistic regression model for Postpartum Depression (EPDS, cut-off >10)

	OR adjs*	CI (95%)
Migrant	6.444	**[1.858; 22.344]**
Maternal education**		
1-4 years	-	-
5-6 years	1.091	[0.086; 13.786]
7-9 years	3.196	[0.260; 39.290]
10-12 years	0.655	[0.049; 8.799]
Higher education	2.501	[0.137; 45.585]
Family income		
<500€	-	-
500-1000€	0.200	**[0.050; 0.799]**
1001-1500€	0.163	**[0.035; 0.768]**
1501-2000€	0.011	**[0.001; 0.203]**
>2000€	-	-
Maternal age**	1.045	[0.937; 1.164]
Parity** (Multiparous)	2.608	[0.789; 8.617]
Marital status** (living with partner)	0.749	[0.243; 2.309]
Adverse obstetric outcomes (previous pregnancies)	4.086	**[1.212; 13.780]**
Depression (before pregnancy)	101.859	**[8.534; 1215.710]**
Non-gestational anaemia**	1.780	[0.257; 12.322]
Gestational age		
Term	-	-
Preterm	4.227	[0.746; 23.967]
Post-term	-	-
Infant's low birth weight**	0.268	[0.045; 1.608]

	OR adjs	CI (95%)
Smoking in pregnancy***		
Non-smoker	-	-
≤10	0.071	**[0.013; 0.379]**
>10	52.248	**[1.562;1747.627]**
Delivery mode		
Normal	-	-
Instrumented	1.839	[0.430; 7.871]
Caesarean-section	0.054	**[0.011; 0.259]**
Metrorrhagia**	0.287	[0.067; 1.237]
Gestational hypertension	76.745	**[13.255 ; 444.347]**
Gestational diabetes**	2.494	[0.507; 12.279]

*Odds ratio adjusted for all variables included (that met the inclusion criteria of p>0.2). Variables removed: "preeclampsia" and "marital status".

** Absent from predictive model

***mean of cigarettes/day

Table IV. Logistic regression model for Perceived Stress (PSS, cut-off >26)

	OR adjs*	CI (95%)
Migrant**	0.708	[0.216; 2.322]
Maternal education		
1-4 years	-	-
5-6 years	0.408	[0.035; 4.732]
7-9 years	0.232	[0.022; 2.415]
10-12 years	0.062	**[0.005; 0.792]**
Higher education	0.071	[0.004; 1.420]
Family income**		
<500€	-	-
500-1000€	3.353	[0.840; 13.378]
1001-1500€	0.553	[0.109; 2.798]
1501-2000€	2.281	[0.289; 18.034]

>2000€	-	-
Parity** (multiparous)	2.409	[0.600; 9.672]
Marital Status** (living with partner)	0.531	[0.174; 1.616]
Adverse obstetric outcomes (previous pregnancies)	8.802	**[1.911; 40.530]**
Depression** (previous to pregnancy)	0.754	[0.158; 3.597]
Anaemia (previous to pregnancy)	8.383	**[1.633; 43.024]**
Infant with low birth weight	7.643	**[1.953; 29.919]**
Smoking in pregnancy***		
Non-smoker	-	-
≤10	0.021	**[0.001; 0.293]**
>10	3.172	[0.316; 31.860]
Delivery mode**		
Normal	-	-
Instrumented	0.671	[0.118; 3.817]
Caesarean section	0.518	[0.107; 2.505]
Infant with malformations**	5.653	[0.614; 52.036]
Gestational hypertension	5.216	**[1.160; 23.443]**
Gestational diabetes**	2.194	[0.459; 10.491]
Episiotomy (only vaginal delivery)	18.820	**[3.953; 89.609]**

* Odds ratio adjusted for all variables included (that met the inclusion criteria of p>0.2). Variables removed: "preeclampsia"

**Absent from predictive model

***mean of cigarettes/day

Table V. Logistic regression model for Perceived Lack of Social Support (SSSS, cut-off >30)

	OR adjs*	CI (95%)
Migrant	6.118	**[1.991; 18.798]**
Maternal education**		
1-4 years	-	-
5-6 years	1.924	[0.173; 21.400]
7-9 years	0.697	[0.086; 5.646]
10-12 years	0.591	[0.067; 5.199]
Higher education	1.654	[0.136; 20.161]
Family income		
<500€	-	-
500-1000€	0.221	**[0.066; 0.740]**
1001-1500€	0.060	**[0.012; 0.297]**
1501-2000€	0.118	**[0.015; 0.912]**
>2000€	-	-
Maternal age	1.147	**[1.026; 1.282]**
Parity (multiparous)	3.766	**[1.116; 12.715]**
Marital status** (living with partner)	0.777	[0.255; 2.362]
Adverse obstetric outcomes** (previous pregnancies)	1.232	[0.365; 4.153]
Depression (previous to pregnancy)	13.356	**[2.318; 76.963]**
Anaemia** (previous to pregnancy)	0.359	[0.050; 2.564]
Gestational age**		
Term	-	-
Preterm	0.642	[0.051; 8.144]
Post-term	-	**-**
Infant birth weight**		
Normal	-	-
Low (<2500g)	0.203	[0.026; 1.554]
High (>4000g)	1.567	[0.223; 11.030]
Gestational hypertension	5.890	**[1.186; 29.239]**
Gestational diabetes**	1.634	[0.370; 7.203]

Metrorrhagia**	1.250	[0.336; 4.648]
Urinary infection	0.143	**[0.026; 0.797]**
Postpartum hemorrhage	8.936	**[2.456;32.509]**
Episiotomy (only vaginal delivery)	6.670	**[2.322;19.158]**

* Odds ratio adjusted for all variables included (that met the inclusion criteria of p>0.2). Variables added: "marital status" and "infant's birth weight"

**Absent from predictive model

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Supplementary Material

Description of the Scales

Mental Health Inventory 5 (MHI5)

The Mental Health Inventory (MHI) was first developed as a measure to assess psychological distress and well-being in general population. Based on this inventory five-item reduced version was developed (MHI-5). It includes items 11, 17, 19, 27 and 34 from the MHI (11. "How long, for the past month, did you felt very nervous?", 17. "For how long, during the past month, did you felt calm and at peace?", 19. "For how long, during the past month, did you felt sad and down?", 27. "For how long, during past month, did you felt sand and down such a way that nothing could cheer you up?" and 34. "In the last month for how long did you felt a happy person?"), representing four dimensions of mental health (Anxiety, Depression, Control Loss, Emotional, Behavioral and Psychological Well-Being) (Pais Ribeiro, 2001; Ware, Snow, Kosinski, & Gandek, 1993). These five items have a response Likert scale of 6 positions: "never", "almost never", "for some time", "most of the time", "almost always" and "always" (e.g. "During the last month, how long you felt happy?"). Scores above 13 indicate a functional mental health (cut-off ≥13, maximum: 25). The Portuguese validation shows a reliability above 0.80, a correlation of 0.95 between the MHI-5 and the version of 38 items, with a Cronbach's alpha of 0.92 (Pais Ribeiro, 2001).

Edinburgh Postpartum Depression Scale (EPDS)

EPDS is a 10-item scale, with a Likert scale response of 4 positions. It was originally constructed as a screening instrument for postpartum depression, but the scale's authors and others propose that, using >10 as the cut-off point (maximum: 30), the scale has high positive predictive value for diagnosing postpartum depression. In general, EPDS validation studies report high sensitivity and specificity, as well as high positive predictive value, both as a screening instrument and as a diagnostic test (Augusto, Kumar, Calheiros, Matos, & Figueiredo, 1996; Hewitt et al., 2009; Santos et al., 2007). EPDS is adequate as a screening instrument using the >10 cut-off point, especially among selected populations of mothers at high risk of postpartum depression (Augusto et al., 1996; Department of Health, 2006). This cut-off was also used in the Portuguese validation of the scale. The clinical and epidemiological value of the scale have been confirmed by several validation studies carried

out in different countries, with both sensitivity and specificity in the 65-96% range, depending on the cut-off point (Hewitt et al., 2009).

Perceived Stress Scale (PSS)

The PSS is a short scale with adequate internal consistency for the present data: Cronbach's alpha of the scale with 13 items is 0.88. It can be used as a measure that focuses on the consequences of perceived stress, and in reading the various issues identified with ease predominant focus on more emotional aspects of emotional disturbance or distress (Pais Ribeiro & Marques, 2009). Through a Likert scale with 5 positions, mothers must respond to the 13 items with the option that best suits them: "never", "almost never", "sometimes", "frequently" or "often". A score above 26 (cut-off >26, maximum: 52) indicates distress. The correlation of PSS with the assessment of psychopathological symptoms (assessed using the Centers for Epidemiologic Depression Scale Study) is 0.76. Thus, the PSS seems to be a measure of distress (Pais Ribeiro & Marques, 2009).

Scale of Satisfaction with Social Support (SSSS)

The final version of the SSSS consists of 15 expressions that are presented for self-fulfilment. The subject must indicate the extent to which agrees with the statement (if it applies to him or her), through a Likert scale with five positions: 'strongly agree', 'agree mostly', 'neither agree nor disagree', 'disagree mostly' and 'strongly disagree' (Pais Ribeiro, 1999). Scores above 30 indicate satisfaction with social support (cut-off >30; maximum: 60). The internal consistency (Cronbach's alpha) of the total scale is 0.85. Items were generated to measure the following aspects of social support: 'satisfaction with friends', "intimacy", 'satisfaction with family', and 'social activities' (Pais Ribeiro, 1999).

CHAPTER V – GENERAL DISCUSSION

General Discussion

Migrants are often, at least initially, relatively healthy when compared with non-migrants in the host country (e.g. the *healthy migrant effect*). Nevertheless available data and numerous studies conclude that they tend to be more vulnerable to certain communicable and non-communicable diseases, occupational hazards, poor mental health, maternal and child problems (22, 24, 36, 38, 46). Migrants moving from a low-income to a high-income country often move from a society in an earlier phase of health transition (epidemiologically) to one in a more advanced phase. In host countries, they are prone to find a declining risk of communicable diseases (attributable to improved hygiene, environmental conditions and health services), but an increasing risk for chronic diseases associated with the adoption of unhealthy lifestyles and behaviours, towards acculturation and/or adaptation and integration (46).

Minorities frequently have less access to care, receive lower quality care and have poorer health status than natives, despite several European efforts that intent to guarantee free access policy to healthcare in some countries. Undocumented migrants face the greatest problems in accessing health services and are more prompt of being exposed to the worse working conditions and high-risk living environments (36, 41, 46). Information about immigrants' health in Europe is inconsistent, as most health information systems are generally not designed to identify people by migration status, making the assessment of health disparities a very difficult task.

Migration itself is frequently a process that increases vulnerability to physical and mental stress and illness. This can lead to health disparities among racial and ethnic groups if the National Health System is not organized to embrace the concept of equity. Therefore, access to healthcare and its quality are two prominent policy concerns at interstate level, and improving equity of services provision needs to be based in further sensitive research in order to become widely implemented. As revised, these theoretical dissimilarities are particularly serious when associated with pregnancy condition, through the biological, social and inherent psychological surroundings constituting a greater risk, increasing the vulnerability of immigrant pregnant women, their children and their families.

The main concern and contribute of this thesis was to explore this complex and delicate theme, by bringing for reflection the role of social determinants of (pregnancy and maternal) health and its relation with Migration (as it was been extensively unmapped). Thus, the initial research question intended to identify the main clinical and social determinants of health (reproductive, general, mental) in immigrant and native women, prenatally and postpartum, and how do these specific determinants of women's health relate with their access, use and quality of care in the defined periods.

Access to health services, as a basic human right, presents huge differences within European countries considering *national asylum policy regimes*, the attribution of long-term residence status, citizenship and allowance of families' reunification, with consequences on accessing health and social services in general (46). Many countries in Europe are restricting entitlements to health services in an attempt to discourage the entry of new migrants (e.g. the case of Spain) (46, 165). However, some countries in southern Europe that have seen major immigration during the past two decades, such as Italy and Portugal, offer better coverage for undocumented migrants than do more wealthy countries in central and northern Europe with longer immigration histories (e.g. Germany, Sweden, United Kingdom) (46, 166).

Despite Portugal's sustained commitments towards improved integration of immigrants through legislation and funding, the present studies identified some inadequacies related to aspects that are generally not covered by the law or that are derived from an erroneous interpretation of the latter. Persons who contact immigrants in their access to healthcare seem frequently unaware of specific accessibility legislation.

Through the systematic review and qualitative study, several determinants and indicators were identified: regarding *clinical and medical aspects*, the higher rates of anaemia and congenital malformations needs to be highlighted (154, 167, 168), as well as a higher risk of teenage delivery, complications of pregnancy (e.g. excessive bleeding and foetal distress) miscarriages and induced abortions especially among illegal immigrants (147). Stillbirth and maternal morbidities at postpartum were also more incident between migrants (169). Regarding *social determinants' analysis*, both studies showed that immigrants frequently had lower educational levels (especially African women), lower incomes and worse working conditions, often living in underprivileged environments exposed to social exclusion (42, 50, 169, 170).

Thus, evaluating and reviewing accessibility, use and quality of healthcare in migrant population (during pregnancy surveillance and at postpartum period) and its possible consequences with maternal health outcomes, numerous aspects need to be underlined. Migrants place specific challenges regarding maternal healthcare and obstetric management (e.g. late booking for antenatal care, fewer prenatal visits (122, 145, 146), increased rates of operative deliveries and suboptimal postpartum care), often due to several barriers in accessing healthcare services: waiting times for appointments (considering substandard and frequently irregular work conditions), transportation (lack of financial support) or absence of qualified interpreters (123), and poor engagement with antenatal care services). Considering the perception of immigrant women regarding the access, use and perceived quality of care during pregnancy and early motherhood, some gaps and barriers arise. *Language barriers* adversely affect access to healthcare, quality of care, patient satisfaction and health outcomes (147, 149, 171, 172). Scientific literature and medical history have been showing

that the non-mastery of the dominant language determines less adequate treatments and may result in increased risk of health complications (36, 173). Inequities in maternal health concerning immigrants were observed in pregnancy outcomes, dramatically aggravated in previous pregnancies (irrespective of if they occurred in Portugal or in the country of origin), both for the mother and the baby. *Other barriers* include unfamiliarity with rights and health systems, gaps in health literacy (and in direct responses of NHS to improve and overcome related aspects), social exclusion, and direct and indirect discrimination (46, 166). In either case, the involvement of local communities seems to be very important for reducing barriers between health services and their migrant users (46, 174).

Several other issues were identified and need to be addressed by local policy makers. Among these were long waiting times for appointments; dissatisfaction with the attitudes and information provided by healthcare professionals, inadequate knowledge of legislation by administrative staff, and the perception of limited access to specialty care. Most of these aspects did not appear to be linked to cultural differences, and were also referred by educated women who requested a more active participation in the decision process. Access can also be affected by a number of barriers related to the lack of necessary professionals, cultural skills and facilities, need for long distance travel and ineffective communication between the care giver and the patient. *Difficulties in communication* are potentially dangerous, increasing the risk of delayed care or the risk of missing obstetrical interventions. Professional interpreters are proved to enable language barriers, but its presence is rarely assured (56, 170).

Immigrants bring with them diverse epidemiological profiles, but most of all their cultural beliefs and practices, including those involving health and illness (11, 14, 155, 175). *Cultural and ethnical differences* in the recognition and interpretation of symptoms have also been reported by others, and this may also have an impact on the patterns of use of health services (176). Regarding migrant women's perceptions about quality and namely about appropriateness of care received, some aspects stand out. Information on the danger signs associated with serious pregnancy complications probably needs to be better conveyed to these groups. Several gaps not only in cultural competence by some health professionals but, ultimately, professional limitations in establishing communication and proper understanding in approaching health behaviours and expectations (health literacy) in immigrants. In fact, health professionals must be alert, not letting themselves be deceived by apparent satisfactory health status. Applying equal healthcare standard may constitute blind clinical tactics in the absence of comprehensive communication between doctor and patient. Therefore, culturally sensitive strategies are necessary to increase awareness of relevant health and social support services in their communities. Public health education policies may

need to target both women and the community in order to increase health literacy and the likelihood of seeking maternal care (122, 123, 146).

Additionally, seeking healthcare is probably affected by *personal concepts of health and illness* and past experiences of care. Other aspects were perceived by immigrant women as stressors because of different health practices in the country of origin. Differences in local guidelines for the management of pregnancy and early motherhood, as well as different policies in access to specialist appointments were often perceived as an example of inadequate healthcare.

Poverty tends to be associated with social exclusion and limited access to basic services, such as health and education (42). Social-economic status has been shown to have a more relevant impact on health than racial/ethnic differences (85, 87). However, despite many health discrepancies between migrants and non-migrants disappear after controlling for socioeconomic status, poor economic status might itself be a result of migration status and ethnic origin due to processes of social exclusion, as already described (46, 166). Therefore, some recognition begins towards the establishment of migration itself to be a social determinant of health (45, 46).

We can anticipate that *Equity* in healthcare depends not only on accessibility but especially in social opportunities. Social risk is widely associated with socio-material deprivation and tends to be reflected in social exclusion to goods and services, including health and education (36, 42, 43). Equitable public health action must provide individuals and groups the equal opportunity to meet their needs, which may not be achieved - as previously mentioned - by providing the same standard care to all. Thus, to properly assess the quality of maternal and child care, patients' perspectives are essential elements and must be taken into account by policy makers and health professionals (167). Good medical care needs to be an arrangement of clinical quality combined with proper communication, beyond mere access to services. Clinical relation between doctor and patient is the key factor to a successful therapeutic alliance, tackling background inequalities, encouraging compliance and additional differentiated care (if required) towards better therapeutic results.

The cross-sectional study was encompassed by a series of difficulties, limitations and challenges consistently present in studies with migrants. Difficulties in gathering information about migrant health include conceptual and methodological challenges, such as different definitions and understandings of what is a *migrant* (15, 45, 46, 166). Moreover, the heterogeneity and small size of migrant communities establishes another challenge, as over-sampling is often required in surveys (like the present one) or clinical studies to yield statistically relevant information (strategy done in some phases of the Health Survey for England) (46).

Migrants do not form a homogeneous population, but exhibit major variations according to religion, culture, language, ethnic origin, country of origin and destination. Correlations between migration background and lower socioeconomic status often turn difficult to identify which factor is more dominant in explaining disadvantage (43, 45, 46).

Therefore, to measure and clarify the impact of Migration as an independent social determinant of (maternal) health, as well as the impact of other social determinants (e.g. income, education level) in health status of migrant and home-grown women, differences in obstetrical care (and outcomes) were evaluated between native and immigrant women. Even in settings where healthcare tends to be free for all women during pregnancy, immigrants are more prone to late booking of prenatal care, to no prenatal care, to a higher caesarean section rate and to more intrapartum complications. Regarding *obstetrical care and outcomes* specifically, immigrant women were found to be more likely to have a caesarean section, perineal laceration, and postpartum haemorrhage. No significant differences were found in the incidence of preterm delivery, low new-born weight or foetal malformations. Delayed access to prenatal care by immigrant women suggests that there may be differences in the expectations regarding prenatal care, decreased knowledge of the conditions offered to immigrants, economic difficulties in accessing healthcare facilities, and/or perhaps less satisfaction with previous encounters with the system. Some of these findings have also been reported in other studies (19, 154, 164, 177).

Family income was significantly lower among migrants. When analysing differences between classes, it was considered useful to explore a new categorization of the variable "family income" to counteract the possible lack of sample' predictive value when subdivided into 5 classes. The results reported a reality consistent with what literature describes: immigrant population tends to have worse working conditions and lower salaries compared to the local population, even with similar levels of education. In fact, even when education levels and family incomes where managed to be similar between migrants and non-migrants, social disadvantages and their reflections in health were visible (151).

It is widely recognized that *education* can lead to improved health: not only by increasing health knowledge and healthy behaviours (health literacy), but also playing an indirect important role in shaping employment opportunities with healthier physical and psychosocial working conditions and higher compensations. Education may also affect health by influencing social and psychological factors as greater perceived personal control, which helps to enhance social support (increasing resilience and reducing health-damaging effects of stress, often associated with migration) (95). When considering *maternal education* in the quantitative sample, namely the years school attendance, Portuguese women were equally distributed between 7-9 years, 12 years and higher education, while more migrants just completed 12 years. Despite that, the similarities between the groups in the number of

overall prenatal visits and attendance of parenthood classes suggest that this was not a major factor for delayed booking of the first appointment.

Migrants were less likely to be satisfied with the support of administrative staff and doctors during prenatal visits. There may be a number of reasons for this, such as different expectations regarding received care, diverse professional roles in the country of origin, communication difficulties during the encounters, gaps in staff's knowledge of immigrant rights, and even discriminatory attitudes. Direct and indirect discrimination is recognized as an important source of disparity in healthcare (24, 45, 46, 145, 160, 171), but one that is difficult for healthcare professionals to acknowledge.

Measuring different maternal mental health outcomes and women's well-being, comparing the odds of stress, low social support, impoverished mental health and depression in immigrant and native women in the postpartum period, it was found that being a migrant also implies increased odds for having low social support and developing postpartum depression. These results are consistent with other previous recent studies that indicated more depressive symptoms and less social support among immigrant mothers when compared to natives (178). Several other studies tend to associate postpartum depression risk, more stress and frequent mental illness amongst immigrant mothers (19, 36, 51, 65, 179).

Regarding *maternal mental health*, explicitly the ability to maintain an adjusted mental functioning after delivery, several conditions and procedures seem to contribute to deprive mothers' emotional, psychological and behavioural well-being, increasing anxiety, perceptions of losing control and discouragement (65). Some of the results identified a major contribution to further deterioration of maternal mental function associated with episiotomies and multiparity. Portugal is among the European countries that most uses episiotomy in vaginal deliveries (73%), far beyond the recommended 10% (115). Thus, regarding increasing medical disagreement with respect to their real potential, its use must be rethought as a causative agent of suffering and reduced quality of life in postpartum. When concerning multiparity, the association may report to a more psychosocial explanation: multiparous women seemed to report a worse individual mental functioning, that can result of an increased complexity of roles in the family (e.g. more demands in managing daily routines with other young children) and associated impending conflicts (it not only requires the reorganization of the marital system, but also that of the previously existing parental system) (175). Maternal education above 10 years of schooling was found to play a major role regarding potentially protective effects to preserve an adjusted mental functioning after delivery. In fact, several studies confirm that maternal education is associated with reduced risk of mental health problems for mothers, as it fosters the development of resiliency,

making individuals more prompt to continue functioning or return to functioning rapidly when facing a major life event, as being a new parent (90, 180).

When considering the hazards for developing *postpartum depression*, being a migrant is significant when the cut-off is above 10. Nonetheless, a possible misestimating of the load of migration into postpartum depression development still may be present, as well as in the remaining measured dimensions, as this and the other scales were provided to immigrant mothers in Portuguese. Therefore, maternal well-being and health may be over-estimated along the study, as translations provided in location may not assess with certainty the effect of migration in all these dimensions, attenuating its impact (as migrant responded less autonomously, when translation was needed, responding to an investigator in spite of self-filling the questionnaire potentiates inhibition of emotional expression, a social desirability). Numerous studies show that immigrants and refugees are more susceptible to mental illness because of potential mental health stressors, such as pre-migration experience, intolerable memories, acculturation, unemployment, and structural characteristics of the new society that may conflict with previous experiences and habits (175). Our results also show that a previous diagnosis of depression (even if already overtaken at the time of the last pregnancy), adverse obstetric outcomes in previous pregnancies and obstetric complications during the last pregnancy (e.g. gestational hypertension) are scientifically recognized to induce accountable levels of anxiety and discomfort and to be associated with an increasing odds of postpartum depression.

Stressful experiences - such as those associated with social disadvantage and racial discrimination - may trigger the release of cortisol, cytokines, and other substances that can damage the immune system, vital organs, and physiologic structures. Growing scientific knowledge has documented the important contributions of *stress in pregnancy* to specific outcomes during pregnancy and birth. Stress exposures are being commonly accepted as relevant explanations to increased risk of preterm birth or having a low birth weight baby (90, 95). As regards this cross-sectional study results, chronic stressors like non-gestational conditions (e.g. anaemia), obstetric complications in previous pregnancies (e.g. adverse obstetric outcomes like spontaneous miscarriage, ectopic pregnancy, stillbirth or neonatal death) and during last pregnancy (e.g. gestational hypertensive disorders) are key elements for perceived distress in postpartum period. This data also may reflect the effects of oxidative stress during pregnancy, promoting postpartum perceived stress, namely through confirming the pernicious effect of having a low birth weight child. Maternal education seemed to play, again, a protective effect against distress as it enables focused action and adaptation to new family roles (20, 46, 179).

Lastly, when exploring *social support*, the findings are greatly consistent with the literature (51): being a migrant seems to be one of the major contributes for having a low

social support. The feeling of isolation and helplessness appears to be aggravated by a previous diagnose of depression, being multiparous (that correlates with multiple and complex family roles and demands, as described above) and having had pregnancy and intrapartum complications in last pregnancy (e.g. hypertensive disorders, episiotomy and postpartum haemorrhage). Considering variables with latent protective influences, we found family income above 500€ has a major role – this aspect is consistent with the literature, since the concept of "social support" refers to the perceived resources available to individuals and implies the subjective assessment that each individual makes of self-value, both largely determined by social opportunities and networks, often interceded by family financial capability (1, 3, 51).

This cross-sectional study enabled to reinforce several differences regarding social support and potentially in postpartum depression (often associated) between immigrant and Portuguese recent mothers. Being a migrant appears not to be a foremost element in explaining odds for distress and depleted mental health. Despite, as these dimensions tend to be implicated in an unclear chain of mental and emotional processes regarding motherhood, potential vulnerabilities should be considered clinical attention ought to be responsive to health expectations, literacy and associated needs. This is especially true at a postpartum moment, and not only for migrants, as several gaps have been identified regarding postpartum attention to all women (migrants and native) in public health facilities (151). As described above, the use of certain procedures (e.g. episiotomy) and standard clinical attention should be considered in addition to clinical recommendations and guidelines: also noticing the potential effects it will have on personal well-being, quality of life and maternal mental adjustment of women.

Furthermore, this study suggests that free access is only one of the aspects involved in adequate healthcare during pregnancy. Further efforts are needed to guarantee that immigrants receive complete information on their rights and on the offers provided by the healthcare system, adequate translation services are available, and a sound anti-discriminatory culture exists (e.g. to provide migrants with information about health and health systems of their host country in their own language), all of which are necessary in order to provide a satisfactory support during pregnancy and childbirth. Health systems should improve health literacy and migrants' empowerment through targeted health promotion interventions, taking into account the different ways people perceive and experience health problems (46).

A huge limitation that pervades the majority of migration research relates to the focus on health disparities comparing with non-migrants in host countries, in a specific period of time. This approach, also applied in this study, tends to ignore the life course global perspective, how different factors affect migrant's health at different stages of their lives,

throughout the migration process. Another limitation, to which the present study and dissertation aimed to reply, is related to the frequent disregard of the role of social determinants of health in these disparities (38, 45). Migrants, like everyone else, have a right to the highest attainable standards of physical and mental health. A major step forward would be to strengthen legislative basis for protection of the rights of the most vulnerable populations (where undocumented migrants stand) (46).

Another promising approach in migrants' studies relates to an old proposal, seldom implemented: the development of cultural competence aware among health professionals. This would be valid namely to ensure non-discrimination in the entrance of health services provision, helping migrants to meet administrative requirements. Ideally, cultural competence aware should integrate undergraduate education and practitioners' medical training so that the concept can gradually go beyond individual health workers, incorporating all health facilities (15, 45, 46, 166).

As stated before, socioeconomic and subjective individual experiences are achieving greater impacts in health, as socioeconomic crisis deepens and aggravates inherent vulnerabilities (85, 177). The contribution of health to social wellbeing and economic development is increasingly being recognized. This is especially relevant among migrants, as they make substantial economic contributions, both in host country and in their country of origin. Improvement of their health and their health' rights would therefore bring wider benefits to the socioeconomic development of both countries (38, 46, 165, 166). Some of the results obtained in this study indicated that variables with crucial impact in processes that may conduct to health depletion not always have a clinical sense, but are determined by personal perceptions, social and subjective meanings that subsequently may be clinically translated into health outcomes that should be carefully considered. Clinical care based on "same care for all" more than equity no longer responds to increased diversity needs and social determinants of health must be urgently recognised and integrated into medical care in order to re-establish social justice. Equity and social justice are, in fact, a major contemporary health concern in services provision towards fairest health outcomes throughout Europe, and reduction of inequities is now considered the next core step in public health systems and its performances (32, 36, 38, 46, 85). This approach could be pertinent in helping to restore migrants' health in general (and maternal health in particular) as a priority in public health, nationally and worldwide.

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ANNEXES

ANNEX I

Guidelines for semi-structured interviews

Guião de Entrevista Aberta a Mães Migrantes

INTRODUÇÂO

- Apresentação da investigadora.
- (A presente entrevista faz parte duma linha de investigação-ação sobre migrações, exclusão social e saúde. Estamos muito interessados em conhecer a perceção das mulheres imigrantes sobre o acesso, utilização e qualidade dos cuidados de saúde recebidos em serviços públicos de saúde, mas também sobre áreas relacionadas com a inserção social e laboral dos imigrantes e minorias étnicas);
- A duração aproximada da entrevista será de meia hora;
- Toda a informação será anónima e confidencial;
- A entrevista será gravada, com consentimento, para facilitar a recolha de informação.
- Tem alguma dúvida sobre a entrevista ou sobre o projeto?

ACESSO E UTILIZAÇÃO DOS SERVIÇOS DE SAÚDE

1. Costuma recorrer ao serviço nacional de saúde? Em que circunstâncias o fez/faz?

2. Quantas vezes, mais ou menos, o fez desde que se encontra em Portugal?

3. Qual a sua perceção sobre o acesso e a qualidade dos serviços de saúde que lhe prestaram?

4. Se tivesse de comparar a prestação dos cuidados de saúde no seu país de origem e no de acolhimento (Portugal), o que diria?

5. Diga-me, por favor, se alguma vez sentiu barreiras no acesso e utilização dos serviços de saúde. Se sim, quais as principais.

6. Identifique, por favor, quais os aspetos que facilitaram o seu acesso e utilização do serviço nacional de saúde. Na sua opinião, o que faria falta para melhorar este acesso, a sua utilização e a qualidade dos serviços que recebeu? Do que sentiu falta?

SAÚDE SEXUAL E REPRODUTIVA

7. Quais os seus principais problemas de saúde (antes de imigrar, e no momento)?

8. Tem detetado problemas no acesso aos serviços de planeamento familiar nos centros de saúde, no seguimento da gravidez e/ou do recém-nascido? Como ultrapassou essas dificuldades (estratégias a que recorre)?

9. Detetou algum problema no atendimento e/ou relacionamento por parte dos profissionais da saúde para consigo? De que forma, e quais as suas consequências?

10. Tem detetado algum problema relacionado com a solicitação/utilização de métodos anticoncetivos? Como classificaria a sua informação sobre contraceção? É a senhora que procura e efetua a escolha do método de contraceção? Quem o recomenda? Além de si, quem mais participa nessa escolha?

PROCESSO MIGRATÓRIO

11. Há quanto tempo se encontra em Portugal? Porque decidiu imigrar? Fale-me, por favor, sobre a sua adaptação, principais barreiras, dificuldades, aspetos positivos…

12. Como está a sua situação documental? Qual a sua perceção acerca das instituições que apoiam os imigrantes na chegada ao país?

13. Se tivesse de fazer um balanço sobre a sua experiência de migração atual, o que diria?

Gostaria, por último, de saber se tem conhecimento sobre **o direito universal, independentemente do estatuto legal, relativo ao acesso a cuidados de saúde, assegurado pelo Sistema Nacional de Saúde português** de forma gratuita para as seguintes populações: crianças com menos de 12 anos ☐, mulheres grávidas e mães recentes ☐, mulheres que recorrem a programas de planeamento familiar ☐, indivíduos com doenças crónicas e/ou contagiosas que constituam ameaça para a saúde pública ☐.

Obrigada pela sua atenção e colaboração.

INTRODUÇÂO

- Apresentação da investigadora.
- (A presente entrevista faz parte duma linha de investigação-ação sobre migrações, exclusão social e saúde. Estamos muito interessados em conhecer a perceção das mulheres portuguesas sobre o acesso, utilização e qualidade dos cuidados de saúde recebidos pelo sistema nacional de saúde);
- A duração aproximada da entrevista será de 20min.;
- Toda a informação será anónima e confidencial;
- A entrevista será gravada, com consentimento, para facilitar a recolha de informação.
- Tem alguma dúvida sobre a entrevista ou sobre o projeto?

ACESSO, UTILIZAÇÃO E QUALIDADE DOS SERVIÇOS DE SAÚDE

1. Costuma recorrer ao serviço nacional de saúde? Em que circunstâncias o fez/faz?

2. Qual a sua perceção sobre a acessibilidade e sobre a qualidade dos serviços de saúde que recebeu?

3. Diga-me, por favor, se alguma vez sentiu alguma barreira ou entrave no acesso e utilização dos serviços de saúde.

4. Identifique, por favor, os aspetos que facilitam o seu acesso e utilização do serviço nacional de saúde. Na sua opinião, o que faria falta para melhorar este acesso, a utilização e aqualidade dos serviços prestados? Do que sentiu falta?

SAÚDE SEXUAL E REPRODUTIVA

5. Quais os seus principais problemas de saúde?

6. Tem detetado problemas no acesso aos serviços de planeamento familiar nos centros de saúde, no seguimento da gravidez e/ou do recém-nascido? Como ultrapassa essas dificuldades (estratégias a que recorre)?

7. Detetou algum problema no atendimento e/ou relacionamento por parte dos profissionais da saúde para consigo? De que forma, e quais as suas consequências?

8. Tem detetado algum problema relacionado com a solicitação/utilização de métodos anticoncetivos? Como classificaria a sua informação sobre contraceção? É a senhora que procura e efetua a escolha do método de contraceção? Quem o recomenda? Além de si, quem mais participa nessa escolha?

Gostaria, por último, de saber se tem conhecimento sobre **o direito universal, independentemente do estatuto legal, relativo ao acesso a cuidados de saúde, assegurado pelo Sistema Nacional de Saúde português** de forma gratuita para as seguintes populações: crianças com menos de 12 anos ☐, mulheres grávidas e mães recentes ☐, mulheres que recorrem a programas de planeamento familiar ☐, indivíduos com doenças crónicas e/ou contagiosas que constituam ameaça para a saúde pública ☐.

Obrigada pela sua atenção e colaboração.

ANNEX II

Description of Categories for Content Analysis

CATEGORIAS APLICADAS ÀS ENTREVISTAS COM MÃES: DESCRIÇÃO

1. **ACESSO E UTILIZAÇÃO DO SNS**

   Acesso geral ao sistema nacional de saúde nos seus serviços distintos, perceção sobre qualidade e acessibilidade, comparação dos serviços entre Portugal e o país de origem (quando aplicável), barreiras e facilitadores, sugestões de melhoria…

   1.1. **Estado de Saúde**

   Avaliação pessoal do seu estado de saúde, antes e depois de imigrar (quando aplicável).

   1.2. **Acesso ao SNS**

   Perceções sobre o acesso ao SNS e comportamentos de solicitação.

   1.3. **Perceções sobre o acesso e a qualidade**

   Perceções sobre o acesso e a qualidade dos serviços recebidos no sistema nacional de saúde.

   1.4. **Comparação dos serviços Portugal – País de origem**

   Avaliação por comparação.

   1.5. **Barreiras**

   Barreiras identificadas no acesso e utilização do SNS

   1.6. **Facilitadores**

   Aspetos identificados que, do ponto de vista da utente, contribuem para a melhoria / maior acessibilidade ao SNS

   1.7. **Lacunas e falhas percebidas no SNS**

   Aspetos percebidos como deficitários na resposta às necessidades evidenciadas.

   1.8. **Sugestões de melhoria**

   Aspetos em falta e que, na perceção das utentes, fariam ultrapassar as lacunas ou falhas identificadas

   1.9. **Barreiras não identificadas**

   Aspetos com interferência significativa no padrão de atendimento e procura dos cuidados de saúde, que a mulher não identificou inicialmente, e dos quais parece não ter consciência do impacto.

2. **SAÚDE GERAL E REPRODUTIVA**

Estado de saúde, perceção sobre o acesso, utilização e qualidade dos atendimentos nos serviços de especialidade do SNS no âmbito do planeamento familiar e saúde materno-infantil, avaliação da adequação e qualidade do atendimento e/ou contacto com os vários profissionais de saúde e perceção sobre a relação profissional – utente.

2.1. Cuidados de saúde materno-infantis

Aspetos (positivos e negativos) decorrentes do seguimento da gravidez, pós-parto, acompanhamento do bebé e planeamento familiar.

2.1.1. Gravidez e Pós-parto: Problemas decorrentes do seguimento da gravidez e pós-parto.

2.1.2. Seguimento do Bebé: Problemas decorrentes ou relativos ao acompanhamento do bebé no SNS.

2.1.3. Planeamento familiar: Problemas decorrentes ou relativos ao acompanhamento nos serviços de planeamento familiar.

2.2. Estratégias de gestão das dificuldades

Estratégias encontradas pelas utentes (quando aplicável) para ultrapassar eventuais barreiras ou dificuldades emergidas no contexto do contacto com os cuidados de saúde materno-infantil.

2.3. Qualidade do atendimento pelos profissionais de saúde

Perceção das utentes sobre a qualidade do atendimento e da relação profissional – utente estabelecida por parte dos diversos profissionais de saúde no SNS, no âmbito materno-infantil.

2.4. Consequências da qualidade de atendimento

Resultados e consequências identificadas relativas aos atendimentos no SNS, no âmbito materno-infantil.

2.5. Métodos anticoncetivos – Informação

Autoavaliação sobre a informação e conhecimento pessoal sobre método de contraceção.

2.6. Métodos anticoncetivos – Uso e decisão

Perceção sobre o uso e a autonomia na escolha do método de contraceção.

3. **PROCESSO MIGRATÓRIO**

   Duração da estadia, barreiras e preocupações decorrentes do processo migratório, motivação para a imigração, adaptação ao país, integração, situação documental, perceção sobre instituições de apoio e avaliação da experiência de migração.

   3.1. Tempo de estadia

   Resposta à pergunta: "Há quanto tempo se encontra em Portugal?".

   3.2. Barreiras e preocupações

   Barreiras, preocupações ou aspetos indutores de ansiedade emergentes, não obrigatoriamente relacionados com o SNS.

   3.3. Motivos subjacentes ao processo de migração

   Motivos que levaram a utente a decidir imigrar; identificação de rotas de suporte social e reunificação familiar.

   3.4. Adaptação ao país

   Aspetos positivos e negativos decorrentes do processo de adaptação e integração no país de acolhimento, dificuldades identificadas, facilitadores, barreiras percebidas…

   3.5. Situação documental

   Estatuto legal: legalizada, em processo de legalização, em situação ilegal…

      3.5.1. Percurso documental: Avaliação e descrição do percurso documental (quando aplicável)

   3.6. Perceção sobre as instituições de apoio

   Perceção das utentes sobre as instituições de apoio ao imigrante disponibilizadas na chegada ao país, e descrição da natureza desse(s) contacto(s) ou apoio(s).

   3.7. Avaliação da experiência de migração

   Balanço sobre a experiência de migração, reflexão sobre ganhos e perdas pessoais, identificação de intenções de retorno…

ANNEX III

Socio-demographic characterization of the Sample

(Qualitative Study)

Socio-demographic characterization of the sample

Participant Country of Origin	Education level (in years)	Occupation	Documentation status	Length of stay in host country
Sao Tome and Principe	11 years	Yes	In legalization	3 years
Sao Tome and Principe	12 years	Yes	Legal	14 years
Sao Tome and Principe	Higher Education	Yes	Legal	20 years
Sao Tome and Principe	6 years	Yes	Legal	7 years
Angola	9 years	No	In legalization	12 years
Angola	9 years	Yes	Legal (Portuguese Nationality)	12 years
Angola	4 years	Yes	Legal (by marriage)	12 years
Cape Verde	11 years	No	In legalization	2 years
Guinea	none	No	No information	6 years
Cape Verde	11 years	Yes	In legalization	7 years
Cape Verde	12 years	Yes	In legalization	5 years
Ukraine	Higher Education	No	Legal	5 years
Ukraine	Higher Education	Yes	Legal	10 years
Russia	Higher Education	Yes	Legal (Portuguese Nationality)	13 years
Ukraine	Higher Education	Yes	Legal (by marriage)	11 years
Ukraine	12 years	No	Legal	4 years
Ukraine	Higher Education	Yes	Legal	10 years
Ukraine	Higher Education	Yes	Legal	10 years
Brazil	12 years	No	In legalization	7 years
Brazil	12 years	No	Legal (by marriage)	6 years
Brazil	12 years	No	Legal (by marriage)	6 years

Brazil	12 years	Yes	Legal	10 years
Brazil	12 years	Yes	Legal	7 years
Brazil	Higher Education	Yes	Legal	10 years
Brazil	Higher Education	Yes	Legal	6 years
Portugal	9 years	No	X	X
Portugal	9 years	No	X	X
Portugal	Higher Education	Yes	X	X
Portugal	12 years	No	X	X
Portugal	12 years	Yes	X	X
Portugal	9 years	No	X	X

ANNEX IV

Ethic Committees' Approvals for Quantitative Research

centro hospitalar
do Porto

Largo Prof. Abel Salazar
4099-001 PORTO
www.hgsa.pt

Hospital Santo António | Hospital Maria Pia | Maternidade Júlio Dinis | Hospital Joaquim Urbano

Exmo. Sr.

Prof. José Manuel Peixoto Caldas

R. Sociedade Protectora dos Animais, 76A – 1.º Dt.º Frt.

4200-392 PORTO

ASSUNTO: Projecto de Investigação - **"Saúde e cidadania: disparidades e necessidades interculturais na atenção sanitária às mães imigrantes"** - N/ REF.ª 235/11(147-DEFI/221-CES)

O Conselho de Administração do CHP **autoriza** a realização do estudo de investigação acima mencionado nesta Instituição, no Serviço de Obstetrícia, sendo Investigador Principal, o Prof. José Manuel Peixoto Caldas e Investigador Responsável no CHP, a Dr.ª Teresa Oliveira.

O estudo de investigação foi previamente analisado pela Comissão de Ética para a Saúde e pelo Gabinete Coordenador de Investigação do Departamento de Ensino, Formação e Investigação do CHP, bem como pela Direcção Clínica, tendo obtido Parecer Favorável para o Projecto Inicial

Cumprimentos,

Autorizado

CONSELHO DE ADMINISTRAÇÃO
23/01/2012

Dr. SOLLARI ALLEGRO
Presidente

Dr.ª ÉLIA GOMES
Vogal Executiva

Dr. PAULO BARBOSA
Director Clínico

Dr. PORTO GOMES
Vogal Executivo

Enf.º EDUARDO ALVES
Enfermeiro Director

* Em todas as eventuais comunicações posteriores sobre este estudo é indispensável indicar a nossa ref.ª.

CENTRO HOSPITALAR
VILA NOVA DE GAIA|ESPINHO

000232 11-JAN '12

Exmo. Sr.

Professor Doutor José Manuel Peixoto Caldas
Centro de Investigação e Intervenção Educativas
Faculdade de Psicologia e Ciências da Educação
Universidade do Porto
Rua Dr. Manuel Pereira Silva
4200-392 Porto

V/ Referência	Data	N/ Referência	Data
		698/2011	27/12/2011

Assunto: *Resposta a pedido de autorização para a realização do Projectos "Saúde e Cidadania: Disparidades e necessidades interculturais na atenção sanitária às mães imigrantes"*

Informo Vª Ex.ª que o pedido para a realização do Projeto *"Saúde e Cidadania: Disparidades e necessidades interculturais na atenção sanitária às mães imigrantes"*, conforme deliberação do Sr. Director Clínico de 26 de Dezembro de 2011, está **autorizado** salvaguardando contudo os constrangimentos estruturais e físicos do serviço, assim como os tempos de entrevista a utentes e profissionais que devem ser tratados com a Sr.ª Diretora do serviço de Ginecologia/Obstetrícia

Com os melhores cumprimentos,

Vila Nova de Gaia, 9 de Janeiro de 2012

CHVNG/E E.P.E.
Dr. JÚLIO SAMPAIO
Responsável pelo Serviço
Nº Mecanográfico 0706
Serv. de Formação, Ensino e Investigação

SÃO JOÃO
HOSPITAL

AUTORIZADO
CONSELHO DE ADMINISTRAÇÃO @ REUNIÃO DE 19 ABR 2012

Centro de Investigação Clínica
Centro Hospitalar São João

Exma. Senhora
Dra Margarida Tavares
Directora Clínica do Centro Hospitalar São João

ASSUNTO: Parecer do Centro de Investigação Clínica

PROJECTO DE INVESTIGAÇÃO: Saúde e cidadania: disparidades e necessidades interculturais na atenção sanitária às mães imigrantes

INVESTIGADOR PRINCIPAL: José Manuel Peixoto Caldas

INFORMAÇÃO DO CENTRO DE INVESTIGAÇÃO CLÍNICA:
Tomei conhecimento. É apresentado um projecto submetido à FCT mas não é referido se foi aprovado e quando se prevê o início dos trabalhos (na candidatura é referido o último trimestre de 2010). Sugiro que seja solicitado comprovativo do orçamento final aprovado. Dado que a instituição de acolhimento é a FPCEUP e que não haverá despesas para o CHSJ, este documento será informativo mas nada tenho a opor à prossecução do estudo.

Com os melhores cumprimentos

Porto, 18 de Janeiro de 2012

A Coordenadora do Centro de Investigação Clínica

(Ana Azevedo)

Exmos. Senhores
Prof. Doutor José Manuel Peixoto Caldas e Mestre Lígia Almeida,

Em resposta à solicitação de v/ Exas. relativamente ao pedido de autorização para a realização do estudo intitulado "Saúde e Cidadania: Disparidades e necessidades interculturais na atenção sanitária às mães imigrantes", venho informar que o pedido foi autorizado em reunião do Conselho de Administração de 14 de Fevereiro de 2012, após parecer favorável da Comissão de Ética. Deverá, no entanto, ser observada a seguinte recomendação da Comissão de Ética:
"Decidido nada opor à realização do estudo desde que as mulheres seleccionáveis para nele participar sejam previamente informadas da realização e objectivos do mesmo e dêem consentimento para serem incluídas na lista de contactos a realizar pelos investigadores."

Mais informo que deve ser dado conhecimento ao SEGIC da produção científica sob a forma de artigos, conferências, livros, teses, relatórios de livre acesso, etc., devendo ser depositado um exemplar na Biblioteca, sempre que possível em suporte electrónico.

Caso seja necessário o envio de um ofício com esta resposta, por favor informe-me.

Com os melhores cumprimentos
Olívia Pestana
Directora do Serviço de Estudos e de Gestão da Informação Científica

Unidade Local de Saúde de Matosinhos, E.P.E.
Rua Dr. Eduardo Torres, 4464-513 Senhora da Hora | Portugal
Telefone: + 351 229 391 233 | Fax: + 351 229 391 231
Extensão: 1233
E-mail: olivia.pestana@ulsm.min-saude.pt Web site: http://www.ulsm.min-saude.pt/
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ANNEX V

Information for Participants and written Informed Consent

Designação do(s) Estudo(s)

"Saúde e Cidadania: Disparidades e necessidades interculturais na atenção sanitária às mães imigrantes" | "Determinantes Sociais de Saúde Materna: o impacto da Migração"

Investigador responsável: Professor Doutor José Peixoto Caldas
Investigadores associados: Mestre Lígia Moreira Almeida

Objetivo da Investigação: estudo e observação da Saúde das mulheres grávidas e acesso aos cuidados de saúde materna como elemento fundamental para a afirmação dos direitos de cidadania em Portugal.

Metodologia: entrevistas aprofundadas às mães e aplicação de questionários; participação em grupos de debate, se do seu interesse, tendo por objetivo a melhoria da comunicação com os profissionais de saúde e a promoção de uma cidadania ativa, autónoma e responsável na procura de cuidados de saúde.

Não são esperados quaisquer riscos decorrentes da sua participação neste estudo. No que concerne aos **benefícios**, estes são evidentes quanto à **melhoria de competências de comunicação, de conhecimentos sobre o funcionamento do Sistema Nacional de Saúde e direitos civis**.

A participação neste estudo **não requer quaisquer tipos de deslocações adicionais** (entrevistas / inquéritos ao domicílio ou local à escolha pela participante).

A participação é voluntária, e a participante tem o direito de decidir se é da sua livre vontade integrar o estudo. Ser-lhe-á fornecido tempo útil para a tomada desta decisão, podendo consultar opiniões que sejam importantes para si. Pode ainda, e a qualquer momento, desistir da participação no estudo, sem que se comprometa o relacionamento com os médicos ou o respeito pelos direitos à assistência que lhe é devida. **Toda a informação que fornecer é absolutamente confidencial e privada**, e será tratada com o máximo respeito e apreço, destinando-se apenas a fins de investigação.

Informamos ainda que todos os procedimentos e materiais relativos a este estudo foram previamente enviados e aprovados pelas Comissões de Ética para a Saúde dos Centros Hospitalares de referência da Região Norte.

Declaração de Consentimento

(De acordo com a Declaração de Helsínquia da Associação Médica Mundial,
e com o modelo CES 05.A da Comissão de Ética para a Saúde do Hospital de S. João, EPE)

Designação do(s) Estudo(s)

"Saúde e Cidadania: Disparidades e necessidades interculturais na atenção sanitária às mães imigrantes" | "Determinantes Sociais de Saúde Materna: o impacto da Migração"

Investigador responsável: Professor Doutor José Peixoto Caldas
Investigadores associados: Mestre Lígia Moreira Almeida

Eu, abaixo assinado, (nome completo da participante) _____

_____

compreendi a explicação que me foi fornecida, por escrito e verbalmente, sobre a investigação que se pretende realizar e para a qual foi pedida a minha participação. Foi-me dada a oportunidade de fazer as perguntas que julguei necessárias, e obtive respostas satisfatórias para todas elas.

Sei que o estudo tem como objetivo principal o estudo e observação da Saúde das mulheres grávidas (mães recentes) e o acesso aos cuidados de saúde materna como um elemento fundamental para a afirmação dos direitos da cidadania em Portugal.

Tomei conhecimento que, de acordo com as recomendações da Declaração de Helsínquia, a informação que me foi prestada versou os objetivos, os métodos, os benefícios previstos, e o eventual desconforto que determinadas perguntas podem provocar.

Além disso, foi-me informado que tenho o direito a decidir livremente aceitar ou recusar a qualquer momento a minha participação neste projeto. Sei que se recusar participar não haverá qualquer prejuízo para a minha segurança e na assistência que sempre me foi prestada. Os dados pessoais que forneço e que me podem identificar serão usados unicamente para o contacto posterior desta equipa de investigação, caso necessário, e não serão divulgados; as minhas informações serão apenas usadas para fins científicos, estando o meu anonimato assegurado.

Foi-me dado o tempo que necessitei para refletir acerca da proposta de participação neste projeto.

Nestas circunstâncias, e tendo em conta a informação que me foi disponibilizada, decido livremente aceitar participar no projeto de investigação acima mencionado, tal como me foi apresentado pelo investigador(a).

Data: _____/_____/_____
Assinatura da participante:

_____

Contactos:

O investigador responsável

_____

ANNEX VI

Socio-demographic characterization of the Sample

(Quantitative Study)

Socio-demographic data, Cross-sectional study

	Migrants (n=89)	Portuguese (n=188)	p
Maternal age *mean (sd)*	30.51 (4.72)	28.50 (4.66)	**0.001***
Delivery mode *n (%)*			**0.023****
Eutocic	35 (39)	95 (51)	
Instrumented	11 (12)	34 (18)	
Caesarean-section	43 (48)	59 (31)	
Parity *n (%)*			**0.005****
Primiparous	37 (42)	112 (60)	
Multiparous	52 (58)	76 (40%)	
Marital status *n (%)*			0.720**
Living with partner	67 (76)	146 (78)	
Living without partner	21 (24)	41 (22)	
Family income[1] *n (%)*			0.119**
<500€	26 (29)	34 (18)	
500-1000€	39 (44)	75 (40)	
1001-1500€	12 (14)	43 (23)	
1501-2000€	9 (10)	25 (13)	
>2000€	3 (3)	10 (5)	
Family income *n (%)*			**0.018****
≤1000€	65 (73)	109 (58)	
>1000€	24 (27)	78 (42)	
Maternal Education *n (%)*			**0.024****
1-4 years	4 (5)	12 (6)	
5-6 years	11 (12)	13 (7)	
7-9 years	15 (17)	57 (30)	
10-12 years	44 (49)	64 (34)	
Higher education	15 (17)	42 (22)	
Baby gender *n (%)*			**<0.001****
Feminine	65 (73)	95 (51)	
Masculine	24 (27)	93 (50)	
Nationality** *n (%)*			
Brazil	48 (54)	-	-
PALOP	18 (20)	-	

Eastern Europe	23 (26)	-	
Length of stay* *mean (sd)*	7.35 (3.64)		
Documentation status** *n (%)*			-
Legalised	47 (53)	-	
In process	36 (40)	-	
Undocumented (illegal)	6 (7)	-	

*T-student test   **χ² test

sd=standard deviation

[1]Regarding Family income, when analyzing differences between classes, we considered that it would be useful to explore a new categorization of the variable, to counteract the possible lack of sample' predictive value when subdivided into 5 or 7 classes (7 classes when considering "no income" and "social income" - Governmental allowance of around 213€ (in 2012) for families judged to be at special social risk, data not shown). Therefore, we also present the results of the new analysis below.

ANNEX VII

Univariate Analysis (Quantitative Study)

1. **Prenatal appointments, maternal habits and complications during pregnancy**

	Migrants (n=89)	Portuguese (n=188)	p*
1st appointment >12 weeks *n (%)*	24 (27)	27 (14)	**0.011**
No. of prenatal visits *n (%)*			**<0.001**
<3	2 (2)	0 (0)	
3 to 6	19 (21)	16 (9)	
7 to 9	46 (52)	140 (75)	
≥10	22 (25)	32 (17)	
Smoking in pregnancy ** *n (%)*			
Non-smokers	74 (83)	142 (76)	0.261
≤10 cigarettes	13 (15)	42 (23)	
>10 cigarettes	2 (2)	3 (2)	
Alcohol in pregnancy *n (%)*	0 (0)	3 (2)	0.554
Drugs in pregnancy *n (%)*	0 (0)	0 (0)	-
Gestational hypertension *n (%)*	9 (10)	24 (13)	0.545
Preeclampsia / Eclampsia *n (%)*	1 (1)	6 (3)	0.437
Gestational diabetes *n (%)*	14 (16)	26 (14)	0.647
Urinary infection *n (%)*	0 (0)	42 (22)	**<0.001**
Placenta praevia *n (%)*	0 (0)	8 (4)	0.058
Placental abruption *n (%)*	0 (0)	10 (5)	**0.033**
Previous adverse obstetric outcomes[2] *n (%)*	22 (25)	23 (12)	**0.009**

*χ² or Fisher's exact test   **mean of cigarettes/day

[2]Adverse obstetric outcomes in previous pregnancies (spontaneous miscarriage, ectopic pregnancy, stillbirth or neonatal death)

2. Intrapartum care and postpartum complications

	Migrants (n=89)	Portuguese (n=188)	p*
Gestational age at delivery *n (%)*			0.116
Preterm	6 (7)	21 (11)	
Term	83 (93)	161 (86)	
Post-term	-	6 (3)	
Delivery mode *n (%)*			**0.023**
Normal	35 (39)	95 (51)	
Instrumental vaginal	11 (12)	34 (18)	
Cesarean section	43 (48)	59 (31)	
Fetal malformations *n (%)*	4 (5)	2 (1)	0.086
Newborn weight *n (%)*			0.181
2500-4000g	77 (87)	149 (79)	
<2500g	10 (11)	25 (13)	
>4000g	2 (2)	14 (7)	
Post-partum haemorrhage *n (%)*	26 (33)	23 (12)	**<0.001**
Postpartum depression**	28 (31%)	39 (21%)	0.053
	(n=46)	(n=129)	
Episiotomy[3] *n (%)*	27 (59)	57 (44)	0.091
Any perineal laceration[3] *n (%)*	22 (48)	15 (12)	**<0.001**

*χ² or Fisher's exact test   **EPDS cut-off point >10

[3]Number of cesarean sections were excluded

3. **Maternal satisfaction with prenatal and intrapartum care**

	Migrants (n=89)	Portuguese (n=188)	p*
PRENATAL CARE			
Administrative staff *n (%)*			**0.005**
Unsatisfied	6 (7)	4 (2)	
Indifferent	4 (5)	31 (17)	
Satisfied	76 (88)	153 (81)	
Nursing team *n (%)*			**0.036**
Unsatisfied	0 (0)	6 (3)	
Indifferent	8 (9)	6 (3)	
Satisfied	78 (91)	176 (94)	
Medical team *n (%)*			**0.006**
Unsatisfied	6 (7)	3 (2)	
Indifferent	8 (9)	6 (3)	
Satisfied	72 (84)	179 (95)	
INTRAPARTUM CARE			
Nursing team *n (%)*			**0.003**
Unsatisfied	0 (0)	6 (3)	
Indifferent	8 (9)	3 (2)	
Satisfied	81 (91)	177 (95)	
Medical team *n (%)*			0.123
Unsatisfied	0 (0)	5 (3)	
Indifferent	8 (9)	8 (4)	
Satisfied	81 (91)	173 (93)	

*χ² or Fisher's exact test

A. Univariate analysis considering Perceived Stress (PSS) as a dependent variable

A.1. Maternal characteristics

	Normative stress	Distress	ORcrude	p.*
Migrant				
No	161 (86%)	27 (14%)	-	-
Yes	68 (76%)	21 (24%)	1.842	0.060
Maternal education *n (%)*				
1-4 years	10 (63)	6 (37)	-	-
5-6 years	16 (68)	8 (33)	0.833	0.787
7-9 years	56 (78)	16 (22)	0.476	0.208
10-12 years	96 (89)	12 (11)	0.208	**0.009**
Higher education	51 (90)	6 (10)	0.196	**0.015**
Family income *n (%)*				
<500€	40 (67)	20 (33)	-	-
500-1000€	95 (83)	19 (17)	0.400	**0.014**
1001-1500€	50 (91)	5 (9)	0.200	**0.003**
1501-2000€	30 (88)	4 (12)	0.267	**0.027**
>2000€	13 (100)	-	-	-
Maternal age *mean (sd)*	29.08 (4.76)	29.47 (4.81)	1.017	0.613**
Parity				
Primiparous	113 (89)	16 (11)	-	-
Multiparous	96 (75)	32 (25)	2.771	**0.002**
Marital status				
Living without partner	47 (76)	15 (24)	-	-
Living with partner	180 (85)	33 (15)	0.574	0.115
Adverse obstetrical outcomes (previous pregnancies)				
No	205 (88%)	27 (12)	-	-
Yes	24 (53%)	21 (47)	6.644	**<0.001**
Depression (prior to pregnancy)				
No	212 (84%)	41 (16%)	-	-
Yes	17 (71%)	7 (29%)	2.129	0.116
Non-gestational HTA				

No	223 (83%)	47 (17%)	-	-
Yes	6 (86%)	1 (14%)	0.791	0.830
Non-gestational anaemia				
No	215 (85%)	38 (15%)	-	-
Yes	14 (58%)	10 (42%)	4.041	**0.002**
Pulmonary disease				
No	225 (83)	47 (17)	-	-
Yes	4 (80)	1 (20)	1.197	0.874
Gestational age				
Term	204 (84%)	40 (16%)	-	-
Pre-term	21 (78%)	6 (22%)	1.457	0.446
Post-term	4 (67%)	2 (33%)	2.550	0.289
Baby birth weight				
Normal	192 (85%)	34 (15%)	-	
Low$^{¥}$ (<2500g)	23 (66%)	12 (34%)	2.946	**0.007**
High (>4000g)	14 (88%)	2 (12%)	0.807	0.783
$^{¥}$**Low birth weight**				
No (normal + high)	206 (85%)	36 (15%)	-	-
Yes	23 (66%)	12 (34%)	2.986	**0.006**

$^{¥}$Conceptually, low birth weight tends to be associated with chronic stress – thus it was specifically explored here.

A.2. Maternal smoking habits

	Normative stress	Distress	ORcrude	p.*
Before pregnancy				
Non-smoker	179 (74%)	44 (92%)	-	**-**
≤10 cigarettes/ day	18 (8%)	1 (2%)	0.213	0.138
>10 cigarettes/ day	42 (18%)	3 (6%)	0.274	**0.037**
1st Trimester				
Non-smoker	172 (75%)	44 (92%)	**-**	**-**
≤10 cigarettes/ day	47 (21%)	1 (2%)	0.083	**0.015**
>10 cigarettes/ day	10 (4%)	6 (3%)	1.173	0.815
2nd Trimester				

Non-smoker	197 (86%)	45 (94%)	**-**	-
≤10 cigarettes/ day	30 (13%)	1 (2%)	0.146	0.062
>10 cigarettes/ day	2 (1%)	2 (4%)	4.378	0.145
3rd Trimester				
Non-smoker	196 (86%)	47 (98%)	**-**	-
≤10 cigarettes/ day	31 (14%)	1 (2%)	0.135	**0.051**
>10 cigarettes/ day	2 (1%)	-	-	-
Smoking in pregnancy†				
Non-smoker	172 (80)	44 (20)	-	-
≤10 cigarettes	54 (98)	1 (2)	0.072	**0.010**
>10 cigarettes	3 (60)	2 (40)	2.606	0.302

†mean of cigarettes/day

A.3. Obstetrical problems, pregnancy and intrapartum complications

	In previous pregnancies…			
	(only multiparous women)			
	Normative stress	**Distress**	**ORcrude**	**p.***
Baby malformations				
No	94 (76)	30 (24)	-	-
Yes	2 (50)	2 (50)	3.133	0.264
Placenta abruption				
No	89 (74)	32 (26)	-	-
Yes	7 (100)	-	-	-
Placenta Praevia				
No	96 (76)	31 (24)	-	-
Yes	-	1 (100)	-	-
Gestational hypertension				
No	88 (77)	26 (23)	-	-
Yes	8 (51)	6 (43)	2.538	0.111
Gestational diabetes				
No	90 (76)	28 (24)	-	**-**
Yes	6 (60)	4 (40)	2.143	0.263
	During last pregnancy…			

	(all women)			
Delivery mode				
Eutocic	99 (76%)	31 (24%)	-	-
Instrumented	41 (91%)	4 (10%)	0.312	**0.038**
Caesarean-section	89 (87%)	13 (13%)	0.466	**0.035**
Baby malformations				
No	226 (83%)	45 (17%)	-	-
Yes	3 (50%)	3 (50%)	5.022	0.053
Metrorrhagia				
No	195 (84%)	37 (16%)	-	-
Yes	34 (77%)	10 (23%)	1.550	0.276
Placenta praevia				
No	221 (83%)	47 (17%)	-	-
Yes	8 (100%)	-	-	-
Pyelonephritis				
No	222 (83%)	47(18%)	-	-
Yes	7 (100%)	-	-	-
Urinary infection				
No	196 (84%)	38 (16%)	-	-
Yes	33 (79%)	9 (21%)	1.407	0.412
DPPNI				
No	225 (83%)	47 (17%)	-	-
Yes	4 (100%)	-	-	-
Gestational hypertension				
No	212 (87%)	31 (13%)	-	-
Yes	17 (52%)	16 (48%)	6.436	**<0.001**
Preeclampsia				
No	225 (84%)	44 (16%)	-	-
Yes	4 (57%)	3 (43%)	3.835	0.085
Gestational diabetes				
No	202 (86%)	34 (14%)	-	-
Yes	27 (68%)	13 (32%)	2.861	**0.006**
Intrapartum…				
Blood loss *n(%)*				
Normal	179 (83)	39 (18)	-	-
Exaggerated	40 (82)	9 (18)	1.033	0.937

Episiotomy* *n (%)*

No	78 (86)	13 (14)	-	-
Yes	62 (74)	22 (26)	2.129	0.052

Any perineal laceration*

n(%)

No	110 (80)	28 (20)	-	-
Yes	30 (81)	7 (19)	0.917	0.853

*χ² or Fisher's exact Test   **Student's T-test

***All caesarean-sections were excluded

B. Univariate analysis considering Social Support (SSSS) as a dependent variable

B.1. Maternal Characteristics

	Good Social Support	Low Social Support	ORcrude	p.*
Migrant *n(%)*				
No	161 (86)	27 (14)	-	-
Yes	45 (51)	44 (49)	5.830	**<0.001**
Maternal Education *n(%)*				
1-4 years	9 (56)	7 (44)	-	-
5-6 years	14 (58)	10 (42)	0.918	0.896
7-9 years	54 (75)	18 (25)	0.429	0.139
10-12 years	87 (81)	21 (19)	0.310	**0.037**
Higher education	42 (74)	15 (26)	0.459	0.185
Family income *n (%)*				
<500€	27 (45)	33 (55)	-	-
500-1000€	89 (78)	25 (22)	0.230	**<0.001**
1001-1500€	47 (86)	8 (14)	0.139	**<0.001**
1501-2000€	29 (85)	-	-	-
>2000€	13 (100)	-	-	-
Maternal age** *mean (sd)*	28.60 (4.61)	30.73 (4.90)	1.100	**0.001**
Parity *n (%)*				
Primiparous	130 (87)	19 (13)	-	-
Multiparous	76 (59)	52 (41)	4.681	**<0.001**
Marital Status				
Living without partner	45 (73)	17 (27)	-	-
Living with partner	159 (75)	54 (25)	0.899	0.743
Adverse obstetrical outcomes (previous pregnancies)				
No	187 (81%)	45 (19%)	-	-
Yes	19 (42%)	26 (58%)	5.687	**<0.001**
Depression (prior to pregnancy)				
No	194 (77%)	59 (23%)	-	-

Yes	12 (50)	12 (50)	3.288	**0.006**
Non-gestational anaemia *n (%)*				
No	192 (76)	61 (24)	-	-
Yes	14 (58)	10 (42)	2.248	0.065
Gestational age *n (%)*				
Term	177 (73)	67 (27)		
Pre-term	26 (96)	1 (4)	0.102	**0.026**
Post-term	3 (50)	3 (50)	2.642	0.241
Baby birth weight *n (%)*				
Normal	164 (73)	62 (27)	-	-
Low (<2500g)	29 (83)	6 (17)	0.547	0.202
High (>4000g)	13 (81)	3 (19)	0.610	0.453
¥**Low birth weight** *n (%)*				
No (normal + high)	177 (73)	65 (27)	-	-
Yes	29 (83)	6 (17)	0.563	0.224

¥Conceptually, evidence regarding social support and birth weight is being reviewed as research gaps have been present regarding social support mechanisms, partner relationships, and cultural influences.

B.2. Maternal smoking habits

	Good Social Support	Low Social Support	ORcrude	p.*
Before pregnancy *n(%)*				
Non-smoker	161 (78)	52 (73)	-	-
≤10 cigarettes/ day	15 (7)	4 (6)	0.826	0.743
>10 cigarettes/ day	30 (15)	15 (21)	1.548	0.217
1st Trimester *n(%)*				
Non-smoker	161 (78)	55 (78)	-	-
≤10 cigarettes/ day	34 (17)	14 (20)	1.205	0.598
>10 cigarettes/ day	11 (5)	2(3)	0.532	0.421
2nd Trimester *n(%)*				
Non-smoker	182 (88)	60 (85)	-	-
≤10 cigarettes/ day	22 (11)	9 (13)	1.241	0.610
>10 cigarettes/ day	2 (1)	2 (3)	3.033	0.272

3rd Trimester *n(%)*

Non-smoker	181 (88)	62 (87)	**-**	**-**
≤10 cigarettes/ day	23 (11)	9 (13)	1.142	0.751
>10 cigarettes/ day	2 (1)	-	-	-

Smoking in pregnancy[†] *n(%)*

Non-smoker	161 (78)	55 (79)	-	-
≤10 cigarettes	41 (20)	14 (20)	1.000	1.000
>10 cigarettes	4 (2)	1 (1)	0.732	0.782

[†]mean of cigarettes/day

B.3. Obstetrical problems, pregnancy and intrapartum complications

In previous pregnancies…				
(only multiparous women)				
	Good Social Support	Low Social Support	ORcrude	p.*
Baby malformations *n(%)*				
No	72 (58)	52 (48)	-	-
Yes	4 (100)	-	-	-
Placenta abruption *n(%)*				
No	69 (57)	52 (43)	-	-
Yes	7 (100)	-	-	-
Placenta Praevia *n(%)*				
No	75 (59)	52 (41)	-	-
Yes	1 (100)	-	-	-
Gestational hypertension *n(%)*				
No	70 (61)	44 (39)	-	-
Yes	6 (43)	8 (57)	2.121	0.190
Gestational diabetes *n(%)*				
No	69 (59)	49 (41)	-	-
Yes	7 (70)	3 (30)	0.603	0.480
During last pregnancy…				
(all women)				
Delivery mode *n(%)*				
Eutocic	92 (71)	38 (29)	-	-
Instrumented	36 (80)	9 (20)	0.605	0.231

Caesaerian-section	78 (77)	24 (23)	0.745	0.331
Baby malformations *n(%)*				
No	200 (74)	71 (26)	-	-
Yes	6 (100)	-	-	-
Metrorrhagia *n (%)*				
No	179 (77)	53 (23)	-	-
Yes	27 (61)	17 (39)	2.126	**0.030**
Placenta Praevia *n (%)*				
No	201 (75)	67 (25)	-	-
Yes	5 (63)	3 (37)	1.800	0.429
Pielonephritis *n (%)*				
No	202 (75)	67 (25)	-	-
Yes	4 (57)	3 (43)	2.261	0.293
Urinary infection *n (%)*				
No	169 (72)	65 (28)	-	-
Yes	37 (88)	5 (12)	0.351	**0.036**
DPPNI *n (%)*				
No	202 (74)	70 (26)	-	-
Yes	4 (100)	-	-	-
Gestational hypertension *n (%)*				
No	185 (76)	58 (24)	-	-
Yes	21 (64)	12 (36)	1.823	0.126
Preeclampsia *n (%)*				
No	200 (74)	69 (26)	-	**-**
Yes	6 (86)	1 (14)	0.483	0.504
Gestational diabetes *n (%)*				
No	180 (76)	56 (24)	-	-
Yes	26 (65)	14 (35)	1.731	0.133
Intrapartum…				
Blood Loss *n (%)*				
Normal	171 (78)	47 (22)	-	-
Exaggerated	25 (51)	24 (49)	3.493	**<0.001**
Episiotomy* *n (%)*				
No	74 (81)	17 (19)	-	-
Yes	54 (64)	30 (36)	2.418	**0.012**

Any perineal laceration***

n(%)

No	102 (74)	36 (26)	-	-
Yes	26 (70)	11 (30)	1.199	0.657

*χ² or Fisher's exact Test   **Student's T-test

***All caesarean-sections were excluded

C. Univariate analysis considering Maternal Mental Health (MHI-5) as a dependent variable

C.1. Maternal Characteristics

	Adjusted Mental Health	Impoverished Mental Health	ORcrude	p.*
Migrant n (%)				
No	168 (89)	20 (11)	-	-
Yes	78 (88)	11 (12)	1.185	0.672
Maternal Education n (%)				
1-4 years	11 (69)	5 (31)	-	-
5-6 years	19 (79)	5 (21)	0.579	0.458
7-9 years	63 (88)	9 (12)	0.314	0.073
10-12 years	99 (92)	9 (8)	0.200	**0.012**
Higher education	54 (95)	3 (5)	0.122	**0.009**
Family income n (%)				
<500€	46 (77)	14 (23)	-	-
500-1000€	104 (91)	10 (9)	0.316	**0.011**
1001-1500€	49 (89)	6 (11)	0.402	0.085
1501-2000€	33 (97)	1 (3)	-	-
>2000€	13 (100)	-	-	-
Maternal age** mean (sd)	29.06 (4.83)	29.81 (4.24)	1.003	0.414
Parity n (%)				
Primiparous	143 (96)	6 (4)	-	-
Multiparous	103 (81)	25 (19)	5.785	**<0.001**
Marital Status n (%)				
Living without partner	51 (82)	11 (18)	-	-
Living with partner	193 (91)	20 (9)	0.480	0.072
Adverse obstetrical outcomes (previous pregnancies) n (%)				
No	216 (93)	16 (7)	-	-
Yes	30 (68)	15 (33)	6.750	**<0.001**
Depression (prior to pregnancy) n (%)				
No	229 (91)	24 (9)	-	-

		ORcrude	p.
Yes	17 (71)	7 (29)	3.929	**0.006**

Non-gestational anaemia *n (%)*

No	227 (90)	26 (10)	-	-
Yes	19 (79)	5 (21)	2.298	0.126

Gestational age *n (%)*

Term	215 (88)	29 (12)		
Pre-term	27 (100)	-	-	-
Post-term	4 (67)	2 (33)	3.707	0.140

Baby birth weight *n (%)*

Normal	200 (89)	26 (11)	-	-
Low (<2500g)	32 (91)	3 (9)	0.721	0.609
High (>4000g)	14 (88)	2 (12)	1.099	0.904

C.2. Maternal smoking habits

	Adjusted Mental Health	Impoverished Mental Health	ORcrude	p.
Before pregnancy				
Non-smoker	188 (76)	25 (81)	-	-
≤10 cigarettes/ day	19 (8)	-	-	-
>10 cigarettes/ day	39 (16)	6 (19)	1.157	0.765
1st Trimester				
Non-smoker	188 (76)	28 (90)	-	-
≤10 cigarettes/ day	48 (20)	-	-	-
>10 cigarettes/ day	10 (4)	3 (10)	2.014	0.309
2nd Trimester				
Non-smoker	214 (87)	28 (90)	-	-
≤10 cigarettes/ day	30 (12)	1 (3)	0.255	0.187
>10 cigarettes/ day	2 (1)	2 (7)	7.643	**0.046**
3rd Trimester				
Non-smoker	213 (87)	30 (97)	-	-
≤10 cigarettes/ day	31 (13)	1 (3)	0.229	0.154
>10 cigarettes/ day	2 (1)	-	-	-

Smoking in pregnancy[†] n(%)				
Non-smoker	188 (76)	28 (93)	-	-
≤10 cigarettes	55 (22)	-	-	-
>10 cigarettes	3 (1)	2 (7)	4.476	0.109

[†]mean of cigarettes/day

C.3. Obstetrical problems, pregnancy and intrapartum complications

In previous pregnancies…				
(only multiparous women)				
	Adjusted Mental Health	**Impoverished Mental Health**	**ORcrude**	**p.**
Baby malformations n (%)				
No	99 (80)	25 (20)	-	-
Yes	4 (100)	-	-	-
Placenta abruption n (%)				
No	96 (79)	25 (21)	-	-
Yes	7 (100)	-	-	-
Placenta Praevia n(%)				
No	103 (81)	24 (19)	-	-
Yes	-	1 (100)	-	-
Gestational hypertension n (%)				
No	91 (80)	23 (20)	-	-
Yes	12 (86)	2 (14)	0.659	0.602
Gestational diabetes n (%)				
No	93 (79)	25 (21)	-	-
Yes	10 (100)	-	-	-
During last pregnancy…				
(all women)				
Delivery mode n (%)				
Eutocic	107 (82)	23 (18)	-	-
Instrumented	42 (93)	3 (7)	0.332	0.085
Caesaerian-section	97 (95)	5 (5)	0.240	**0.005**
Baby malformations n (%)				
No	240 (89)	31 (11)	-	-

Yes	6 (100)	-	-	-
Metrorrhagia *n (%)*				
No	212 (91)	20 (9)	-	-
Yes	34 (77)	10 (23)	3.118	**0.008**
Placenta praevia *n (%)*				
No	241 (90)	27 (10)	-	**-**
Yes	5 (63)	3 (37)	5.356	**0.027**
Pielonephritis *n (%)*				
No	239 (89)	30 (11)	-	-
Yes	7 (100)	-	-	-
Urinary infection *n (%)*				
No	210 (90)	24 (10)	-	-
Yes	36 (86)	6 (14)	1.458	0.442
DPPNI *n (%)*				
No	242 (89)	30 (11)	-	-
Yes	4 (100)	-	-	-
Gestational hypertension *n (%)*				
No	220 (91)	23 (9)	-	-
Yes	26 (79)	7 (21)	2.575	**0.048**
Preeclampsia *n (%)*				
No	239 (89)	30 (11)	-	-
Yes	7 (100)	-	-	-
Gestational diabetes *n (%)*				
No	212 (90)	24 (10)	-	-
Yes	34 (85)	6 (15)	1.559	0.367
Intrapartum…				
Blood loss *n (%)*				
Normal	192 (88)	26 (12)	-	-
Exaggerated	44 (90)	5 (10)	0.839	0.734
Episiotomy* *n (%)*				
No	84 (92)	7 (8)	-	-
Yes	65 (77)	19 (23)	3.508	**0.008**
Any perineal laceration* *n (%)*				
No	117 (85)	21 (15)	-	-

Yes	32 (87)	5 (13)	0.871	0.796

*χ² or Fisher's exact Test   **Student's T-test

***All caesarean-sections were excluded

D. Univariate analysis considering Postpartum Depression (EPDS>10) as a dependent variable

D.1. Maternal Characteristics

	Without Depression	Depression >10	ORcrude	p.*
Migrant *n (%)*				
No	149 (79)	39 (21)	-	-
Yes	61 (69)	28 (31)	1.754	0.053
Maternal Education *n (%)*				
1-4 years	9 (56)	7 (44)	-	-
5-6 years	15 (63)	9 (37)	0.771	0.693
7-9 years	47 (65)	25 (35)	0.684	0.499
10-12 years	94 (87)	14 (13)	0.191	**0.004**
Higher education	45 (79	12 (21)	0.343	0.074
Family income *n (%)*				
<500€	31 (52)	29 (48)	-	-
500-1000€	90 (79)	24 (21)	0.285	**<0.001**
1001-1500€	44 (80)	11 (20)	0.267	**0.002**
1501-2000€	31 (91)	3 (9)	0.103	**0.001**
>2000€	13 (100)	-	-	-
Maternal age** *mean (sd)*	28.81 (4.67)	30.19 (4.94)	1.063	**0.040**
Parity *n (%)*				
Primiparous	132 (89)	17 (11)	-	-
Multiparous	78 (61)	50 (39)	4.977	**<0.001**
Marital status *n (%)*				
Living without partner	44 (71)	18 (29)	-	-
Living with partner	164 (77)	49 (23)	0.730	0.332
Adverse obstetrical outcomes (previous pregnancies) *n (%)*				
No	195 (84)	37 (16)	-	-
Yes	15 (33)	30 (67)	10.541	**<0.001**
Depression (prior to pregnancy) *n (%)*				
No	200 (79)	53 (21)	-	-
Yes	10 (42)	14 (58)	5.283	**<0.001**
Non-gestational anaemia *n*				

(%)

No	198 (78)	55 (22)	-	-
Yes	12 (50)	12 (50)	3.600	**0.003**
Gestational age *n (%)*				
Term	186 (76)	58 (24)	-	-
Pre-term	21 (78)	6 (22)	0.916	0.857
Post-term	3 (50)	3 (50)	3.207	0.160
Baby birth weight *n (%)*				
Normal	175 (77)	51 (23)	-	-
Low (<2500g)	23 (66)	12 (34)	1.790	0.135
High (>4000g)	12 (75)	4 (25)	1.114	0.822
[¥]**Low birth weight** *n (%)*				
No (normal + high)	187 (77)	55 (23)	-	-
Yes	23 (66)	12 (34)	1.774	0.139

[¥]Conceptually, depression is being considered as integrated in the aetiology of low birth weight.

D.2. Maternal smoking habits

	Without Depression	Depression >10	ORcrude	p.*
Before pregnancy *n (%)*				
Non-smoker	160 (76)	53 (79)	-	**-**
≤10 cigarettes/ day	17 (8)	2 (3)	0.355	0.176
>10 cigarettes/ day	33 (16)	12 (18)	1.098	0.802
1st Trimester *n (%)*				
Non-smoker	160 (76)	56 (84)	-	-
≤10 cigarettes/ day	42 (20)	6 (9)	0.408	0.053
>10 cigarettes/ day	8 (4)	5 (8)	1.786	0.326
2nd Trimester *n (%)*				
Non-smoker	182 (87)	60 (90)	-	-
≤10 cigarettes/ day	28 (13)	3 (5)	0.325	0.072
>10 cigarettes/ day	-	4 (6)	-	-
3rd Trimester *n (%)*				
Non-smoker	181 (86)	62 (93)	-	-

≤10 cigarettes/ day	29 (14)	3 (5)	0.302	0.055
>10 cigarettes/ day	-	2 (3)	-	-
Smoking in pregnancy[†] *n(%)*				
Non-smoker	160 (76)	56 (85)	-	-
≤10 cigarettes	49 (23)	6 (9)	0.350	**0.022**
>10 cigarettes	1 (1)	4 (6)	11.429	**0.031**

[†]mean of cigarettes/day

D.3. Obstetrical problems, pregnancy and intrapartum complications

In previous pregnancies… (only multiparous women)				
	Without Depression	**Depression >10**	**ORcrude**	**p.***
Baby malformations *n (%)*				
No	78 (63)	46 (37)	-	-
Yes	-	4 (100)	-	-
Placenta abruption *n (%)*				
No	71 (59)	50 (41)	-	-
Yes	7 (100)	-	-	-
Placenta Praevia n(%)				
No	78 (61)	49 (39)	-	-
Yes	-	1 (100)	-	-
Gestational hypertension *n (%)*				
No	73 (64)	41 (36)	-	-
Yes	5 (36)	9 (64)	3.205	**0.049**
Gestational diabetes *n (%)*				
No	72 (61)	46 (39)	-	-
Yes	6 (60)	4 (40)	1.043	0.950
During last pregnancy… (all women)				
Delivery mode *n (%)*				
Eutocic	89 (69)	41 (31)	-	-
Instrumented	36 (80)	9 (20)	0.543	0.143
Caesaerian-section	85 (83)	17 (17)	0.434	**0.010**

Baby malformations *n (%)*				
No	210 (78)	61 (22)	-	-
Yes	-	6 (100)	-	-
Metrorrhagia *n (%)*				
No	182 (78)	50 (22)	-	-
Yes	28 (64)	16 (36)	2.080	**0.037**
Placenta praevia *n (%)*				
No	205 (77)	63 (23)	-	**-**
Yes	5 (63)	3 (37)	1.952	0.369
Pielonephritis *n (%)*				
No	204 (76)	65 (24)	-	-
Yes	6 (86)	1 (14)	0.523	0.552
Urinary infection *n (%)*				
No	174 (74)	60 (26)	-	**-**
Yes	36 (86)	6 (14)	0.483	0.118
DPPNI *n (%)*				
No	206 (76)	66 (24)	-	-
Yes	4 (100)	-	-	-
Gestational hypertension *n (%)*				
No	198 (82)	45 (18)	-	-
Yes	12 (36)	21 (64)	7.700	**<0.001**
Preeclampsia *n (%)*				
No	207 (77)	62 (23)	-	-
Yes	3 (43)	4 (57)	4.452	0.055
Gestational diabetes *n (%)*				
No	186 (79)	50 (21)	-	-
Yes	24 (60)	16 (40)	2.480	**0.012**
Intrapartum…				
Blood loss *n (%)*				
Normal	164 (75)	54 (25)	-	-
Exaggerated	36 (74)	13 (26)	1.097	0.797
Episiotomy* *** *n (%)*				
No	68 (75)	23 (26)	-	-
Yes	57 (68)	27 (32)	1.400	0.316

Any perineal laceration* *** *n*

(%)

No	97 (70)	41 (30)	-	-
Yes	28 (76)	9 (24)	0.760	0.520

*χ² or Fisher's exact Test   **Student's T-test

***All caesarean-sections were excluded

ANNEX VIII

Multivariate Analysis, Logistic Regressions

(Quantitative Study)

A. Logistic regression model for Perceived Stress, SPSS Method Enter (PSS, cut-off >26)

	OR adjs*	CI (95%)
Migrant**	0.708	[0.216; 2.322]
Maternal education		
1-4 years	-	-
5-6 years	0.408	[0.035; 4.732]
7-9 years	0.232	[0.022; 2.415]
10-12 years	0.062	**[0.005; 0.792]**
Higher education	0.071	[0.004; 1.420]
Family income**		
<500€	-	-
500-1000€	3.353	[0.840; 13.378]
1001-1500€	0.553	[0.109; 2.798]
1501-2000€	2.281	[0.289; 18.034]
>2000€	-	-
Parity** (multiparous)	2.409	[0.600; 9.672]
Marital Status** (living with partner)	0.531	[0.174; 1.616]
Adverse obstetric outcomes (previous pregnancies)	8.802	**[1.911; 40.530]**
Depression** (previous to pregnancy)	0.754	[0.158; 3.597]
Anaemia (previous to pregnancy)	8.383	**[1.633; 43.024]**
Infant with low birth weight	7.643	**[1.953; 29.919]**
Smoking in pregnancy***		
Non-smoker	-	-
≤10	0.021	**[0.001; 0.293]**
>10	3.172	[0.316; 31.860]
Delivery mode**		
Normal	-	-
Instrumented	0.671	[0.118; 3.817]
Caesarean section	0.518	[0.107; 2.505]
Infant with malformations**	5.653	[0.614; 52.036]
Gestational hypertension	5.216	**[1.160; 23.443]**

Gestational diabetes**	2.194	[0.459; 10.491]
Episiotomy (only vaginal delivery)	18.820	**[3.953;89.609]**

* Odds ratio adjusted for all variables included (that met the inclusion criteria of p>0.2). Variables removed: "preeclampsia"

**Absent from predictive model (Enter)

***mean of cigarettes/day

B. Logistic regression model for Perceived Lack of Social Support, SPSS Method Enter (SSSS, cut-off >30)

	OR adjs*	CI (95%)
Migrant	6.118	**[1.991; 18.798]**
Maternal education**		
1-4 years	-	-
5-6 years	1.924	[0.173; 21.400]
7-9 years	0.697	[0.086; 5.646]
10-12 years	0.591	[0.067; 5.199]
Higher education	1.654	[0.136; 20.161]
Family income		
<500€	-	-
500-1000€	0.221	**[0.066; 0.740]**
1001-1500€	0.060	**[0.012; 0.297]**
1501-2000€	0.118	**[0.015; 0.912]**
>2000€	-	-
Maternal age	1.147	**[1.026; 1.282]**
Parity (multiparous)	3.766	**[1.116; 12.715]**
Marital status** (living with partner)	0.777	[0.255; 2.362]
Adverse obstetric outcomes** (previous pregnancies)	1.232	[0.365; 4.153]
Depression (previous to pregnancy)	13.356	**[2.318; 76.963]**
Anaemia** (previous to pregnancy)	0.359	[0.050; 2.564]
Gestational age**		
Term	-	-
Preterm	0.642	[0.051; 8.144]
Post-term	-	**-**
Infant birth weight**		
Normal	-	-
Low (<2500g)	0.203	[0.026; 1.554]
High (>4000g)	1.567	[0.223; 11.030]
Gestational hypertension	5.890	**[1.186; 29.239]**
Gestational diabetes**	1.634	[0.370; 7.203]

Metrorrhagia**	1.250	[0.336; 4.648]
Urinary infection	0.143	**[0.026; 0.797]**
Postpartum hemorrhage	8.936	**[2.456;32.509]**
Episiotomy (only vaginal delivery)	6.670	**[2.322;19.158]**

* Odds ratio adjusted for all variables included (that met the inclusion criteria of p>0.2).

Variables added: "marital status" and "infant's birth weight"

**Absent from predictive model (Enter)

C. Logistic regression model for Impoverished Maternal Mental Health, SPSS Method Enter (MHI-5, cut-off ≥13)

	OR adjs*	CI (95%)
Migrant**	0.163	[0.026; 1.030]
Maternal education		
1-4 years	-	-
5-6 years	0.708	[0.052; 9.550]
7-9 years	0.132	[0.010; 1.772]
10-12 years	0.021	**[0.001; 0.412]**
Higher education	0.007	**[0.000; 0.665]**
Family income**		
<500€	-	-
500-1000€	1.767	[0.280; 11.140]
1001-1500€	0.290	[0.034; 2.474]
1501-2000€	0.408	[0.017; 9.907]
>2000€	-	-
Parity (multiparous)	13.820	**[1.895; 100.789]**
Marital status** (living with partner)	0.214	[0.040; 1.148]
Adverse obstetrical outcomes** (previous pregnancies)	3.236	[0.516; 20.313]
Depression** (prior to pregnancy)	3.477	[0.331; 26.557]
Non-gestational anaemia**	1.108	[0.110; 11.203]
Smoking in pregnancy***		
Non-smoker	-	-
≤10	-	-
>10	5.568	[0.298; 104.044]
Delivery mode**		
Eutocic	-	-
Instrumented	0.543	[0.055; 5.400]
Caesarean section	1.284	[0.146; 11.252]
Metrorrhagia**	0.952	[0.192; 4.711]
Placenta praevia**	6.563	[0.299; 143.858]
Gestational hypertension**	3.490	[0.501; 24.294]
Episiotomy (only vaginal delivery)	116.660	**[10.021; 1358,087]**

*Odds ratio adjusted for all variables included (that met the inclusion criteria of p>0.2).
Variables added: "being a migrant"; Variables removed: "gestational age".

**Absent from predictive model (Enter)

***mean of cigarettes/day

D. Logistic regression model for Postpartum Depression (EPDS, cut-off >10)

	OR adjs*	CI (95%)
Migrant	6.444	**[1.858; 22.344]**
Maternal education**		
1-4 years	-	-
5-6 years	1.091	[0.086; 13.786]
7-9 years	3.196	[0.260; 39.290]
10-12 years	0.655	[0.049; 8.799]
Higher education	2.501	[0.137; 45.585]
Family income		
<500€	-	-
500-1000€	0.200	**[0.050; 0.799]**
1001-1500€	0.163	**[0.035; 0.768]**
1501-2000€	0.011	**[0.001; 0.203]**
>2000€	-	-
Maternal age**	1.045	[0.937; 1.164]
Parity** (Multiparous)	2.608	[0.789; 8.617]
Marital status** (living with partner)	0.749	[0.243; 2.309]
Adverse obstetric outcomes (previous pregnancies)	4.086	**[1.212; 13.780]**
Depression (before pregnancy)	101.859	**[8.534; 1215.710]**
Non-gestational anaemia**	1.780	[0.257; 12.322]
Gestational age		
Term	-	-
Preterm	4.227	[0.746; 23.967]
Post-term	-	-
Infant's low birth weight**	0.268	[0.045; 1.608]
Smoking in pregnancy**		
Non-smoker	-	-
≤10	0.071	**[0.013; 0.379]**
>10	52.248	**[1.562; 1747.627]**
Delivery mode		
Normal	-	-
Instrumented	1.839	[0.430; 7.871]
Caesarean-section	0.054	**[0.011; 0.259]**

Metrorrhagia**	0.287	[0.067; 1.237]
Gestational hypertension	76.745	**[13.255; 444.347]**
Gestational diabetes**	2.494	[0.507; 12.279]

*Odds ratio adjusted for all variables included (that met the inclusion criteria of p>0.2). Variables removed: "preeclampsia" and "marital status".

** Absent from predictive model (Enter)

***mean of cigarettes/day

ANNEX IX

Questionnaire (Quantitative Study)

Data de preenchimento: |__|__| / |__|__| / |__|__|
Parto há |__|__| dias

Agradecemos-lhe, desde já, a vossa disponibilidade para participar nesta investigação.
Asseguramos o seu total anonimato, pelo que a partir deste momento ser-lhe-á atribuído um número (ID, acima) para que os investigadores consigam identificar os seus dados sem reconhecer quem é.
A sua colaboração é imprescindível para que possamos melhorar a adequação dos cuidados de saúde a todas as comunidades.

QUESTIONÁRIO SOBRE A GRAVIDEZ

I. IDENTIFICAÇÃO

Vamos-lhe fazer algumas perguntas que dizem respeito à sua história de saúde e da dos seus familiares mais próximos.

Como tal, antes de mais, é importante saber:

1.   Relativamente aos seus pais:

1.1.   De onde são naturais?

Pai: Local: _____   País: _____   N/S ☐

Mãe: Local: _____   País: _____   N/S ☐

2.   Qual o grau académico mais avançado que concluíram os seus pais?

	Pai	Mãe
Sem escolaridade	☐	☐
Primeiro ciclo do ensino básico (4ºano)	☐	☐
Segundo ciclo do ensino básico (6ºano)	☐	☐
Terceiro ciclo do ensino básico (9ºano)	☐	☐

Ensino secundário (12ºano)	☐	☐
Bacharelato	☐	☐
Licenciatura	☐	☐
Mestrado	☐	☐
Doutoramento	☐	☐
Outro. Qual? _____	☐	☐
Não Sabe	☐	☐

3. **Qual a sua data de nascimento?** |__|__| - |__|__| - |__|__|__|__|

4. **De onde é natural?** (Se nasceu em Portugal, passar à pergunta 5)

Local: _____ País: _____ N/S ☐

4.1.2. Se imigrante, vive em Portugal desde quando? |__|__| - |__|__| - |__|__|__|__|

4.1.3. Se imigrante, qual o seu estatuto atual?

Legalizada	☐
Em processo de regularização	☐
Sem documentos	☐

5. **Qual a sua situação marital atual?**

Casada	☐
"União de facto"	☐
Solteira	☐
Viúva	☐
Separada	☐
Divorciada	☐

5.1. Se está casada ou vive em união de facto,

5.1.4. Há quanto tempo? |__|__| meses/anos*

5.1.5. Qual a nacionalidade do seu marido/companheiro?

_____

(se a nacionalidade da mulher, do companheiro e/ou dos seus pais for portuguesa,

passar à pergunta 6)

5.1.6. Qual(is) a(s) língua(s) que se fala(m) em casa?

_____.

6.   Qual o máximo grau académico que completou?

			Idade com que completou[1]	
Primeiro ciclo do ensino básico (4º ano)	☐		|__|__| anos	N/S ☐
Segundo ciclo do ensino básico (6º ano)	☐		|__|__| anos	N/S ☐
Terceiro ciclo do ensino básico (9º ano)	☐		|__|__| anos	N/S ☐
Ensino secundário (12º ano)	☐		|__|__| anos	N/S ☐
Bacharelato	☐	Qual? _____	|__|__| anos	N/S ☐
Licenciatura	☐	Qual? _____	|__|__| anos	N/S ☐
Mestrado	☐	Qual? _____	|__|__| anos	N/S ☐
Doutoramento	☐	Qual? _____	|__|__| anos	N/S ☐
Outro	☐	Qual? _____	|__|__| anos	N/S ☐

[1]Preencher em mais do que um grau académico caso não tenham sido obtidos de forma continuada

7.   Qual é a sua profissão?

_____.

8.   Qual é a profissão do seu marido/companheiro?

_____.

Não tem marido/companheiro   ☐

9.   Indique qual é a sua <u>condição perante o trabalho</u>, bem como a do seu companheiro. (Se adotada recolher informação sobre os pais adotivos)

	Própria	**Companheiro**
Exerce profissão	☐	☐
Estudante	☐	☐
Doméstico(a)	☐	☐
Trabalhador(a)-estudante	☐	☐
Desempregado(a)	☐	☐
Procura primeiro emprego	☐	☐

	Própria	Companheiro
Incapacitado(a) permanente para o trabalho	☐	☐
Frequenta curso de formação profissional	☐	☐
Reformado(a)	☐	☐
Não se aplica (falecido(a) e/ou sem companheiro)	☐	☐
Não sabe	☐	☐
Outra situação. Qual?	☐	☐
	_____	_____

9.1.   Se está desempregada, incapacitada permanentemente ou reformada, há quanto tempo se encontra nessa situação? |__|__| meses/anos* N/S ☐

10.   Indique qual é a sua <u>situação na profissão</u>, bem como a do seu companheiro.

(se a própria, ou o companheiro não estão activos, refira-se à(s) sua(s) profissão(ões) anterior(es). **Doméstica(o) ou Estudante, incluir em "outra situação")**

	Própria	**Companheiro**
Patrão / Patroa	☐	☐
Trabalhador(a) por conta de outrem	☐	☐
Trabalhador(a) em empresa familiar remunerado(a)	☐	☐
Trabalhador(a) em empresa familiar não remunerado(a)	☐	☐
Trabalhador(a) independente	☐	☐
Não se aplica (falecido(a) e/ou sem companheiro)	☐	☐
Não sabe	☐	☐
Outra situação	☐	☐
Qual? (Ex.: estudante)	_____	_____

II. O Seu Nascimento

Procure lembrar-se de algumas características relacionadas com o seu próprio nascimento.

11.   Nasceu em casa?

Sim   ☐   Não   ☐ (passar à pergunta 12)   N/S ☐ (passar à pergunta 12)

11.1.   Se sim, quem acompanhou a sua mãe durante o parto?

Médico	Sim ☐	Não ☐	N/S ☐
Parteira / Enfermeira	Sim ☐	Não ☐	N/S ☐
Conhecido	Sim ☐	Não ☐	N/S ☐
Outro. Quem? _____	Sim ☐	Não ☐	N/S ☐

12. Qual a idade gestacional da sua mãe quando você nasceu? |__|__|

Semanas/Meses

Apenas sabe que nasceu:

Antes do tempo (<37 semanas) ☐ Com o tempo todo (≥37 semanas) ☐

N/S ☐

13. Qual a idade da sua mãe quando você nasceu? _____ Anos

III. A SUA SITUAÇÃO ATUAL

14. Onde vive?

Em casa própria	☐
Em casa arrendada por si e/ou companheiro	☐
Em casa dos pais	☐
Em casa dos pais do marido/companheiro	☐
Em parte da casa dos pais ou pais do companheiro	☐
Outra situação. Qual? _____	☐

15. Quantos quartos tem a sua casa? |__|__|

16. Quais e quantas pessoas vivem consigo? Se têm <u>18 anos ou menos de idade</u>, quais as suas idades?

	Sim	Não	Nº	Idade (anos)				
Marido / Companheiro	☐	☐		|__|__|				
Seus pais	☐	☐	|__|__|					
Pais do marido / companheiro	☐	☐	|__|__|					
Filho(s) biológico(s)	☐	☐	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|
Filho(s) adoptivo(s)	☐	☐	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|
Enteado(s)	☐	☐	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|
Sobrinho(s)	☐	☐	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|
Irmão(s)	☐	☐	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|
Outros familiares	☐	☐	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|
Amigos	☐	☐	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|	|__|__|

Outros: ☐ ☐ |__|__| |__|__| |__|__| |__|__| |__|__| |__|__|

_____

17. Vou agora fazer-lhe uma pergunta sobre um assunto que muita gente acha pouco simpático mas que é um dado útil para prever a saúde. **Se me quiser responder, gostaria que situasse num dos seguintes intervalos o rendimento mensal total (incluindo vencimentos e outras fontes de rendimento) de todas pessoas que vivem na sua casa:**

RSI ☐	1501 – 2000 € ☐	N/S ☐
< 500 ☐	2001 – 2500 € ☐	Prefere não dizer ☐
500 – 1000 € ☐	2501 – 3000 € ☐	Sem rendimentos ☐
1001 – 1500 €☐	>3000 € ☐	

17.1. Qual é o membro do agregado que mais contribui para o rendimento mensal?
_____. N/S ☐

IV. HISTÓRIA CLÍNICA FAMILIAR
Seguidamente, vou fazer-lhe algumas perguntas relativamente à saúde dos seus familiares mais próximos.

18. O seu PAI biológico sofre ou alguma vez sofreu de alguma das seguintes doenças? Se sim, com que idade lhe foi/foram diagnosticada(s)? (se não souber a idade exacta, recorra a um dos intervalos apresentados)

Não conheceu ☐ (passar à pergunta 20)

	Sim	Não	N/S	Idade de diagnóstico (anos)
Diabetes (com insulinoterapia)	☐	☐	☐	|__|__| anos N/S ☐ <20 ☐ 20-40 ☐ > 40 ☐
Diabetes (sem insulinoterapia)	☐	☐	☐	|__|__| anos N/S ☐ <20 ☐ 20-40 ☐ > 40 ☐
AVC	☐	☐	☐	|__|__| anos N/S ☐ <55 ☐ 55-65 ☐ > 65 ☐
Enfarte	☐	☐	☐	|__|__| anos N/S ☐ <55 ☐ 55-65 ☐ > 65 ☐
Asma	☐	☐	☐	|__|__| anos N/S ☐ <10 ☐ 10-20 ☐ > 20 ☐

Cancro. Qual(is)? _____	☐	☐	☐	|__|__| anos N/S ☐ <30 ☐ 30-49 ☐ 50-64 ☐ >65 ☐

(Se o pai ainda for vivo, passar à pergunta 20)

19.   Se o pai já faleceu,

19.1.   Em que ano e com que idade faleceu?\|__\|__\|__\|__\| (ano) \|__\|__\| anos N/S ☐

19.2.   Qual a causa da morte? _____ N/S ☐

A sua MÃE biológica sofre ou alguma vez sofreu de alguma das seguintes doenças? Se sim, com que idade lhe foi/foram diagnosticada(s)? (se não souber a idade exacta, recorra a um dos intervalos apresentados)

Não conheceu   ☐ (passar à pergunta 22)

	Sim	**Não**	**N/S**	**Idade de diagnóstico (anos)**
Diabetes (com insulinoterapia)	☐	☐	☐	|__|__| anos N/S ☐ <20 ☐ 20-40 ☐ > 40 ☐
Diabetes (sem insulinoterapia)	☐	☐	☐	|__|__| anos N/S ☐ <20 ☐ 20-40 ☐ > 40 ☐
AVC	☐	☐	☐	|__|__| anos N/S ☐ <55 ☐ 55-65 ☐ > 65 ☐
Enfarte	☐	☐	☐	|__|__| anos N/S ☐ <55 ☐ 55-65 ☐ > 65 ☐
Asma	☐	☐	☐	|__|__| anos N/S ☐ <10 ☐ 10-20 ☐ > 20 ☐
Cancro. Qual(is)? _____	☐	☐	☐	|__|__| anos N/S ☐ <30 ☐ 30-49 ☐ 50-64 ☐ >65 ☐

(Se a mãe ainda for viva, passar à pergunta 22)

20.   Se a mãe já faleceu,

20.1.   Em que ano e com que idade faleceu?\|__\|__\|__\|__\| (ano) \|__\|__\| anos N/S ☐

20.2.   Qual a causa da morte? _____ N/S ☐

V. PERCEÇÃO DE BEM-ESTAR

21.   Em geral, antes da gravidez, diria que a sua saúde era:

Ótima ☐   Muito boa ☐   Boa ☐   Razoável ☐   Fraca ☐

22. Comparando com a sua saúde antes de engravidar, como descreve o seu estado de saúde após a gravidez?

Muito melhor ☐   Com algumas melhoras ☐   Aproximadamente igual ☐

                     Um pouco pior   ☐   Muito pior   ☐

VI. A SUA HISTÓRIA CLÍNICA

23. Antes de engravidar, alguma vez um médico lhe diagnosticou uma doença que a obrigue ou tenha obrigado a tratamento continuado? (Antes de assinalar *Não*, devem ser consideradas todas as doenças indicadas, bem como quaisquer outras que sejam relevantes)

         Sim ☐   Não ☐ (passar à pergunta 26)

23.1. Se sim, qual(is) e quando é que lhe foi(ram) diagnosticada(s)?

		Idade de Diagnóstico
Depressão	☐	|__|__| anos
Epilepsia	☐	|__|__| anos
Dislipidemia (ex.colesterol elevado)		|__|__| anos
	☐	
Diabetes (não gestacional)	☐	|__|__| anos
Hipertensão arterial	☐	|__|__| anos
Anemia. Qual(is)? _____	☐	|__|__| anos
Doença dos pulmões. Qual(is)? _____	☐	|__|__| anos
Doença do coração. Qual(is)? _____	☐	|__|__| anos
Doença dos rins. Qual(is)? _____	☐	|__|__| anos
Cancro. Qual(is)? _____	☐	|__|__| anos
Outro. Qual? _____	☐	|__|__| anos
Outro. Qual? _____	☐	|__|__| anos

VII. HÁBITOS TOXICOLÓGICOS

24. Fuma ou alguma vez fumou regularmente (mais de um cigarro por dia)?

         Sim ☐   Não ☐ (passar à pergunta 27)

24.1. Nos seguintes períodos, quantos cigarros fumava regularmente?

                 Nos últimos 3 meses antes de engravidar   \|__\|__\|__\| dia/semana/mês

                 1ºTrimestre   \|__\|__\|__\| dia/semana/mês

| | 2ºTrimestre | |__|__|__| dia/semana/mês |
| | 3ºTrimestre | |__|__|__| dia/semana/mês |

26.2. Com que frequência?

_____

26.3. Se deixou de fumar durante a gravidez, com quantas semanas parou?

|__|__| Semanas   N/S ☐   Não se aplica ☐

27. Durante a gravidez e/ou após o parto, quanto tempo estava em contacto com pessoas a fumar? Considere todas as situações: <u>dentro de casa,</u> nos seus <u>locais de lazer</u> (restaurantes, cafés, etc), no <u>local de trabalho.</u>

	3 meses antes de engravidar	1T	2T	3T	Após o parto
Nunca	☐	☐	☐	☐	☐
Esporadicamente	☐	☐	☐	☐	☐
Diariamente, menos de 1h	☐	☐	☐	☐	☐
Diariamente, 1-3h	☐	☐	☐	☐	☐
Diariamente, 3h ou mais	☐	☐	☐	☐	☐

28. Alguma vez teve problemas de alcoolismo ou ingeriu bebidas alcoólicas regularmente?

    Sim ☐   Não ☐ (passe para a pergunta 29)

28.1. Se sim, com que idade começou a beber? |__|__| anos   N/S ☐

28.2. Com que frequência?

_____

28.3. Se já não consome, com que idade parou? |__|__| anos   N/S ☐
Não se aplica ☐

29. Consome ou alguma vez consumiu drogas regularmente?

    Sim ☐   Não ☐ (passar à pergunta 30)

29.1. Se sim, com que idade começou a consumir drogas? |__|__| anos   N/S ☐

29.2. Com que frequência? _____

29.3. Se já não consome, com que idade parou? |__|__| anos N/S ☐ Não se aplica ☐

29.4. Consumiu drogas durante esta gravidez?   Sim ☐   Não ☐

VIII. HISTÓRIA GINECOLÓGICA E OBSTÉTRICA

30. Alguma vez utilizou algum tipo de <u>contracetivo</u> (ex: pílula, anel vaginal, adesivo, implante, preservativo)**?**

        Sim ☐   Não ☐

           a.   Quais?

Tipo de contracetivo	Uso (excluindo gravidez)	Frequência de uso
Oral (pílula)	Sim ☐ Não ☐ N/S ☐	☐ < 6 meses ☐ ≥6 meses
Anel vaginal	Sim ☐ Não ☐ N/S ☐	☐ < 6 meses ☐ ≥6 meses
Sistema transdérmico (adesivo)	Sim ☐ Não ☐ N/S ☐	☐ < 6 meses ☐ ≥6 meses
DIU	Sim ☐ Não ☐ N/S ☐	☐ < 6 meses ☐ ≥6 meses
Implante subdérmico	Sim ☐ Não ☐ N/S ☐	☐ < 6 meses ☐ ≥6 meses
Preservativo	Sim ☐ Não ☐ N/S ☐	☐ < 6 meses ☐ ≥6 meses

           b.   Quando tomou/utilizou pela última vez um contracetivo hormonal?

             |__|__| - |__|__| - |__|__|__|__| N/S ☐

           c.   Que outros métodos utiliza ou utilizou para evitar engravidar?

             Abstinência (método do calendário) ☐;

         Coito interrompido ☐; Outros ☐

         (Quais?:_____)

31. Quantas vezes recorreu a <u>contraceção de emergência</u> (ex.: pílula do dia seguinte)**?** |__|__|;

         Não se aplica ☐

           a.   Se recorreu, quando o fez pela última vez? |__|__| - |__|__| -

             |__|__|__|__|

             Se não sabe a data, fez entre os |__|__| e os |__|__| anos   N/S ☐

32. Já alguma vez fez o "<u>teste de papanicolau</u>"?

         Sim ☐   Não ☐   N/S ☐

           a.   Se sim,

                i.   Com que idade fez pela 1ª vez? |__|__| anos

                      N/S ☐

               ii.   Faz regularmente?

                 Sim   ☐   De quanto em quanto tempo? |__|__| anos

Não   ☐   Quantas vezes fez? |__|__| vezes

33. Quantas vezes esteve grávida? |__|__|

    a. Quantas foram do pai deste bebé? |__|__|

    b. Quantos filhos biológicos tem? |__|__|

34. Em relação à(s) gravidez anterior(es):

Gravidezes anteriores	Ultima	Informações pertinentes sobre as gravidezes anteriores
Resultado obstétrico [1]		
Obs. [2]		
Data do parto		
N.º fetos (ao nascimento) (nº/NS)		
Idade gestacional (sem,d / NS))		
Sexo (M/F/NS)		
Peso ao nascimento (g)		
Malformações congénitas (a) (S/N)		
Tipo de parto (E, F, V, C) [3]		
Descolamento da placenta (S/N)		
Placenta prévia (S/N)		
Diabetes na gravidez (S/N)		
Hipertensão na gravidez (hipertensão gestacional, pré-eclâmpsia, eclâmpsia)		
Tromboembolismo		
Aleitamento materno (S/N)		
Se sim, durante quanto tempo? (meses/anos)		
a) em exclusivo		
b) suplementado		

[1] **Resultado obstétrico**: NV - nado-vivo; FM - feto morto > 22 sem; AE - abortamento espontâneo; AI - abortamento induzido (gravidez inviável); IMG - interrupção médica da gravidez; IVG – interrupção voluntária da gravidez; GE - gravidez ectópica; DT - doença do trofoblasto (mola hidatiforme);

[2] **Obs.**: Registar, caso tenha ocorrido, MN – morte neonatal (<28d), MPN – morte pós-neonatal (28d-1ano), Mx – morte aos x anos.

[3] **Tipo de parto**: E – eutócico, F – fórceps, V – ventosa, C – cesariana

(a) _____

35. Alguma vez consultou um médico, curandeiro ou outro profissional **por não conseguir engravidar?**

Não	☐
Sim, em gravidezes anteriores	☐ Qual? _____
Sim, nesta gravidez	☐ Qual? _____
Sim, nesta gravidez e em anteriores	☐ Qual? _____

36. Esta gravidez foi planeada? Sim ☐ Não ☐

36.1. Antes de engravidar (especificamente desta vez) foi a uma consulta de planeamento familiar? Sim ☐ Não ☐

37. Esta gravidez ocorreu espontaneamente? Sim ☐ Não ☐

a. Se <u>não</u>, como ocorreu?

Por indução da ovulação	☐
Por inseminação artificial	☐
Por fertilização *in vitro*	☐
Por ICSI	☐

XIX. CUIDADOS PRÉ-NATAIS

38. Tem médico assistente (de família)? Não tem ☐

_____

a. Se não tem médico de família, sabe porquê?

_____

b. Em que instituição trabalha o seu médico?

_____

39. Em que local(ais) realiza as consultas durante a gravidez?

Centro de saúde. Qual? ☐ _____ das |__|__| às |__|__| sem.

Hospital. Qual? ☐ _____ _____ das |__|__| às |__|__| sem.

Médico/clínica particular. Qual? ☐ _____das |__|__| às |__|__| sem.

40. Quantas semanas de gravidez tinha quando foi à primeira consulta pré-natal, isto é, especificamente para saber se estava grávida ou por estar grávida?

|__|__| semanas   N/S   ☐

41. Foi à 1ª consulta com mais de 12 semanas de gravidez? Sim ☐ Não ☐

a. Se sim, por que motivo?

Não saber que estava grávida   ☐

Achar que não era necessário   ☐

Não ter marcação de consulta mais cedo   ☐

Outro (Qual?:_____) ☐

42. Quantas consultas efetuou especificamente por estar grávida?

|__|__| consultas (se não souber o nº exato recorrer à escala apresentada).

Menos de 3 consultas   ☐

3 a 6 consultas   ☐

7 a 9 consultas   ☐

Mais de 10 consultas   ☐

43. Que exames realizou durante a gravidez?

	Sim	Não	N/S	Nº	1ºT	2ºT	3ºT
Ecografia (data 1ª: |__|__| - |__|__| - |__|__|)	☐	☐	☐	____	☐	☐	☐
Radiografia (a)	☐	☐	☐	____	☐	☐	☐
Amniocentese	☐	☐	☐	____	☐	☐	☐
Biopsia das vilosidades coriónicas	☐	☐	☐	____	☐	☐	☐
Análises de sangue	☐	☐	☐	____	☐	☐	☐
Rastreio bioquímico de malformações	☐	☐	☐	____	☐	☐	☐
Rastreio do Streptococcus Grupo B	☐	☐	☐	____	☐	☐	☐
Outro. Qual?_____	☐	☐	☐	____	☐	☐	☐

(a) Qual a razão? _____

44. Antes e durante a gravidez fez algum teste de despiste de HIV?

Sim ☐   Não ☐ (passar à pergunta 45)   N/S ☐ (passar à pergunta 45)

a. Se sim, quantas vezes realizou o teste <u>antes de engravidar</u>?

|__|__| vezes   Não se aplica ☐   N/S ☐

b. Se sim, quantas vezes realizou <u>durante a gravidez</u> e em que trimestres?

|__|__| vezes   Não se aplica ☐   N/S ☐

Trimestres: 1º T ☐   2ºT ☐   3ºT ☐   N/S ☐

45. Durante esta gravidez teve algum tipo de complicação?   Sim ☐   Não ☐

    a. Qual(is)?_____

_____.

46. Durante a gravidez esteve "de baixa"?

Sim ☐   Não ☐ (passar à pergunta 47)   Não estava ativa ☐ (passar à pergunta 47)

    a. Se sim, em que trimestre(s), por quanto tempo e qual o motivo?

    1º T   Sim ☐ |__|__| dias   Não ☐

        Motivo _____

    2º T   Sim ☐ |__|__| dias   Não ☐

        Motivo _____

    3º T   Sim ☐ |__|__| dias   Não ☐

        Motivo _____

47. Esteve internada durante esta gravidez? Se sim, quantas vezes?

    Sim ☐ |__|__| vezes   Não ☐ (passar à pergunta 48)

    a. Por que motivo(s)?

    _____

    b. Em que local(is)?

    _____

    c. Durante quanto tempo? |__|__| dias/semanas/meses |__|__|
    dias/semanas/meses|__|__| dias/semanas/meses

    d. Qual o tipo de tratamento(s) recebido?   N/S ☐

    _____

48. Realizou algum tratamento ou intervenção cirúrgica com anestesia durante a gravidez?

    Sim ☐   Não ☐ (passar à pergunta 49)

    a. Em que trimestres?   1º T ☐   2ºT ☐   3ºT ☐

    b. Por que motivo(s)? _____

    c. Qual o tipo de anestesia?

    Local ☐   Loco-regional (epidural, raquianestesia) ☐   Geral ☐N/S ☐

49. Qual o seu grau de satisfação em relação ao acompanhamento prestado por todos os profissionais de saúde durante a gravidez? Por favor, especifique:
(considere os diferentes locais onde teve consultas)

Médicos:

Muito insatisfeita	1	2	3	4	5	Muito satisfeita

Enfermeiros:

Muito insatisfeita	1	2	3	4	5	Muito satisfeita

Assistente Social:

Muito insatisfeita	1	2	3	4	5	Muito satisfeita

Administrativos:

Muito insatisfeita	1	2	3	4	5	Muito satisfeita

a. Por favor defina as **principais causas de insatisfação**: **(Se aplicável)**

Poucas consultas ☐ Em que local? _____

Falta de equipamento médico ☐ Em que local? _____

Instalações inadequadas ☐ Em que local? _____

Muito tempo de espera pela consulta (sala espera) ☐ Em que local? _____

Consulta médicas muito apressadas ☐ Em que local? _____

Médico diferente em cada consulta ☐ Em que local? _____

Atitude inadequada dos administrativos ☐ Em que local? _____

Atitude inadequada dos enfermeiros ☐ Em que local? _____

Atitude inadequada dos médicos ☐ Em que local? _____

Qualidade da informação recebida (pouco esclarecedora) ☐ Em que local? _____

Procedimentos burocráticos complexos para marcar consultas ☐ Em que local? _____

Falta de recursos económicos para pagar consultas/exames ☐ Em que local? _____

				Em que local? _____

Falta de recursos económicos para pagar medicamentos ☐ Em que local? _____

Distância/tempo de deslocação ao centro de Saúde e/ou Hospital ☐ Em que local? _____

Ausência de tradutores/intérpretes ☐ Em que local? _____

Outra _____ ☐ Em que local? _____

b. Há algum aspeto positivo que gostaria de salientar?

_____

_____

_____

c. Quando teve dúvidas sobre a gravidez a quem recorreu para as esclarecer?

_____

d. Alguma vez lhe foi recusado o acesso a serviços públicos de saúde?

Sim ☐ Não ☐ Se sim, qual o motivo? _____

50. Durante a gravidez tomou algum medicamento (terapia crónica, ácido fólico, vitaminas, analgésicos, antibióticos, medicamentos para dormir, produtos naturais, etc.)? Sim ☐ Não ☐

a. Se sim, qual(is)? Qual o motivo da administração, quantas vezes tomava por dia e a que semanas de gestação iniciou e finalizou o tratamento? Qual a frequência de utilização e quem lhe indicou o(s) medicamento(s)?

Nome	Motivo	Início (Data)	Nº tomas / dia	Fim (Data)	Ritmo de toma	Indicação		
						M	F	O
					☐ Episódico, em SOS ☐ De forma descontinuada, mas frequente ☐Contínuo (diariamente)	☐	☐	☐
					☐ Episódico, em SOS ☐ De forma descontinuada, mas frequente ☐Contínuo (diariamente)	☐	☐	☐
					☐ Episódico, em SOS ☐ De forma descontinuada, mas frequente	☐	☐	☐

					□Contínuo (diariamente)			
					□ Episódico, em SOS			
					□ De forma descontinuada, mas frequente	□	□	□
					□Contínuo (diariamente)			

M – Médico   F – Farmacêutico   O – Outro

b. Frequentou aulas de preparação para o parto?   Sim   □   Não   □

Se frequentou, desde quando? |__|__| semanas de gestação   N/S □

1. Onde?_____

2. Quantas sessões efetuou? |__|__| sessões   N/S □

3.   Assistiu sozinha às aulas?   Sim □   Não □

ii. Se <u>sim</u>, porquê?

_____

iii. Se <u>não</u>, quem assistiu consigo?

Companheiro   □

Mãe   □

Irmã   □

Outro. Quem? _____

c. Durante a gravidez, ou nestes últimos tempos, passou por algum dos seguintes acontecimentos?

	Sim	Não	1ºT	2ºT	3ºT	Após o
Mudança de casa	□	□	□	□	□	□
Agravamento da situação financeira	□	□	□	□	□	□
Roubo ou assalto	□	□	□	□	□	□
Desemprego próprio	□	□	□	□	□	□
Desemprego do companheiro ou de outro membro da	□	□	□	□	□	□
Doença grave de um filho	□	□	□	□	□	□
Doença grave do companheiro ou outro membro da família	□	□	□	□	□	□
Falecimento de um filho	□	□	□	□	□	□
Falecimento do companheiro	□	□	□	□	□	□
Falecimento de outra pessoa próxima. Quem?	□	□	□	□	□	□
Divórcio ou rompimento da relação com o companheiro	□	□	□	□	□	□
Ter sofrido agressão física	□	□	□	□	□	□
Acidente de automóvel	□	□	□	□	□	□
Outro acontecimento perturbante. Qual? _____	□	□	□	□	□	□

X. Parto

a. Qual a data do parto? |__|__| - |__|__| - |__|__|__|__|

b. Onde decorreu o parto? _____

c. Foi acompanhada no parto? Sim ☐ Não ☐ (passar à pergunta 56)

      1. Se sim, por quem?

      Marido/ Companheiro   ☐

      Mãe / Pai   ☐

      Amiga / amigo   ☐

      Outro _____ ☐

      2. Se não, porquê?

      _____

d. Qual o tipo de parto? Vaginal espontâneo ☐ Vaginal instrumentado (fórceps ou ventosa) ☐ Cesariana ☐

      1. Se teve parto vaginal, foi com anestesia?

      Sim ☐ Não ☐ Qual? _____

      2. Se fez cesariana, esta foi programada? Sim ☐ Não ☐

e. Durante o seu trabalho de parto sentiu-se informada acerca do que estava a acontecer?

Completamente informada ☐ Moderadamente informada ☐ Mal informada ☐

f. Quais considera terem sido as suas principais fontes de informação sobre o trabalho de parto?

(Assinalar todas as pertinentes)

Mãe ☐ Irmãs ☐ Colegas/Amigas ☐ Outros familiares ☐ Médico de Família ☐ Médico Obstetra ☐ Enfermeiros da Maternidade ☐ Enfermeiros do Centro de Saúde ☐ Parteiras ☐ Curandeiro ☐

Outras ☐ (Quais?: _____)

g. Qual o seu grau de satisfação em relação ao acompanhamento prestado por todos os profissionais de saúde durante o <u>parto</u>? Por favor, especifique:

Médicos:

Muito insatisfeita	1	2	3	4	5	Muito satisfeita

Enfermeiros:

Muito insatisfeita	1	2	3	4	5	Muito satisfeita

a. Assinale, por favor, de entre as **possíveis situações de insatisfação** durante o parto, as que aconteceram consigo: **(assinalar todas as opções pertinentes)**

(a) Foi deixada muito sozinha durante o trabalho de parto ☐

(b) Não foi possível ter um acompanhante comigo durante uma parte importante do trabalho de parto ☐

(c) Parto muito demorado ☐

(d) Parto muito doloroso ☐

(e) Houve pouco respeito pela minha privacidade ☐

(f) Examinaram-me demasiadas vezes ☐

(g) Recebi pouca atenção da equipa de enfermagem ☐

(h) Recebi pouca atenção da equipa médica ☐

(i) Não gostei da atitude da equipa de enfermagem

(j) Não gostei da atitude da equipa médica ☐

(k) Havia demasiadas pessoas a assistir ao parto ☐

(l) Informação insuficiente sobre a evolução do trabalho de parto ☐

(m) Informação insuficiente, ou pouco clara, sobre o bem-estar do bebé ☐

(n) Excessiva demora no "primeiro contacto" com o bebé ☐

XI. INTERNAMENTO HOSPITALAR

60. Quantos dias ficou internada após o parto? |__|__| dias   N/S ☐

1. Se mais do que 3, explicitar motivo: _____

2. Se o bebé não tiver tido alta simultânea, explicitar motivo: _____

61. No caso de ser imigrante, considere a possibilidade de ter tido este bebé no seu país de origem. Na sua opinião, o acompanhamento clínico que teria recebido seria:

Muito pior ☐;   Pior ☐;   Semelhante ☐;   Melhor ☐;   Muito melhor ☐

Por que motivos?

_____

_____.

XII. ANTROPOMETRIA

62. Qual o seu peso no início da gravidez? |__|__|__| , |__| kg

  (se não souber exatamente, registar aquele que tinha na primeira consulta)
    a. Peso na 1ª consulta |__|__|__| , |__| kg   N/S ☐

62.1.   Qual o seu peso no final da gravidez? |__|__|__| , |__| kg   N/S ☐

63.   Qual a sua altura? _____

XIII. INFORMAÇÕES CLÍNICAS ADICIONAIS (consultar, se necessário, livro de grávida):

64. Idade gestacional na altura do parto: |__|__| S |__|__| D   S/I ☐

65. Complicações durante a gravidez:

Hipertensão gestacional	Sim ☐	Não ☐
Pré-eclampsia/ eclampsia	Sim ☐	Não ☐
Síndrome de HELLP	Sim ☐	Não ☐
Diabetes gestacional	Sim ☐	Não ☐
Pielonefrite aguda	Sim ☐	Não ☐
Metrorragia	Sim ☐	Não ☐
Infeção urinária	Sim ☐	Não ☐
Placenta prévia	Sim ☐	Não ☐
DPPNI	Sim ☐	Não ☐
Malformações fetais	Sim ☐	Não ☐

_____

Outros.   Sim ☐   Não ☐

_____

66. Motivo e tratamento(s) em internamento(s) durante a gravidez:

    Não aplicável ☐

Data: |__|__|/|__|__|/|__|__| Duração: |__|__|__| dias   S/I ☐

_____

_____.

67. Início do trabalho de parto: S/I ☐

  Espontâneo   ☐

Parto induzido ☐

Cesariana em ausência de trabalho de parto ☐

68. Tipo de parto: S/I ☐

    Eutócico ☐ (passar à pergunta 69)

    Ventosa. Tipo: _____ ☐ (passar à alínea b.)

    Fórceps ☐ (passar à alínea b.)

    Cesariana ☐ (passar à alínea a.)

    a. Cesariana:

        Em trabalho de parto ☐ S/I ☐

        Ausência de trabalho de parto ☐ S/I ☐

        i.Cesariana: Programada ☐ Urgente ☐ Emergente ☐ S/I ☐

        ii. Cesariana emergente: Sim ☐ Não ☐ S/I ☐

        iii. Motivo da cesariana: S/I ☐

_____

_____.

(passar à pergunta 73)

    b. Motivo para utilização de ventosa/fórceps: S/I ☐

_____

_____.

69. Analgesia no parto: Sim ☐ Qual? _____

        Não ☐ (passar à pergunta 70) S/I ☐

    Geral ☐ Raquianestesia ☐ Epidural ☐ S/I ☐

70. Duração do trabalho de parto: |__|__| H S/I ☐

71. Sangue perdido: Normal ☐ Exagerado ☐ S/I ☐

72. Episiotomia: Sim ☐ Não ☐ S/I ☐

73. Laceração do períneo: Sim ☐ Não ☐ S/I ☐

_____

_____.

Gostaríamos, para finalizar, de saber um pouco mais sobre si, e como se tem sentido durante esta gravidez. Para tal, solicitamos que responda às questões abaixo colocadas nos distintos instrumentos, de forma espontânea, imediata e honesta, sem se preocupar com o conteúdo das respostas – desde que represente a sua forma actual de estar e sentir.

Agradecemos a sua colaboração e interesse, eles são essenciais para nós!

EPS

Nesta escala fazemos perguntas acerca dos seus **sentimentos e pensamentos que ocorreram no último mês**. Em cada uma pedimos para indicar com que frequência você se sentiu ou pensou de determinada maneira. Embora algumas das questões sejam parecidas, há diferenças entre elas e deverá responder a cada uma como uma questão diferente. A melhor maneira de o fazer é responder a cada questão rapidamente. Ou seja, não se preocupe em lembrar o número de vezes que se sentiu de determinada maneira. Em vez disso **assinale a alternativa que lhe pareça uma estimativa razoável**. As alternativas que pode escolher são: "Nunca"; "Quase Nunca"; "Algumas vezes"; "Com muita frequência"; e "Muitas vezes".

1. No último mês, com que frequência se sentiu aborrecida com algo que ocorreu inesperadamente?	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes
2. No último mês, com que frequência se sentiu incapaz de controlar as coisas que são	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes

importantes na sua vida?					
3. No último mês, com que frequência se sentiu nervosa ou "stressada"?	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes
4. No último mês, com que frequência enfrentou com sucesso coisas aborrecidas e chatas?	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes
5. No último mês, com que frequência sentiu que estava a enfrentar com eficiência mudanças importantes que estavam a ocorrer na sua vida?	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes
6. No último mês, com que frequência se sentiu confiante na sua capacidade para lidar com os seus problemas pessoais?	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes
7. No último mês, com que frequência sentiu que as coisas estavam a correr como queria?	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes
8. No último mês, com que frequência reparou que não conseguia fazer todas as coisas que tinha que fazer?	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes
9. No último mês, com que frequência se sentiu capaz de controlar as suas irritações?	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes
10. No último mês, com que frequência sentiu que	Nunca	Quase	Algumas vezes	Com muita	Muitas vezes

as coisas estavam a correr pelo melhor?		Nunca		frequência	
11. No último mês, com que frequência se sentiu irritada com coisas que aconteceram e estavam fora do seu controlo?	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes
12. No último mês, com que frequência foi capaz de controlar o seu tempo?	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes
13. No último mês, com que frequência sentiu que as dificuldades se acumulavam ao ponto de não ser capaz de as ultrapassar?	Nunca	Quase Nunca	Algumas vezes	Com muita frequência	Muitas vezes

MHI-5

Abaixo vai encontrar um conjunto de questões acerca do modo **como se sente no dia-a-dia**. Responda a cada uma delas assinalando com uma cruz (**X**) num dos rectângulos a resposta que melhor se aplica a si.

1. Durante quanto tempo, no último mês, se tem sentido muito nervosa? (11)	Nunca	Quase nunca	Durante algum tempo	A maior parte do tempo	Quase sempre	Sempre
2. Durante quanto tempo, no	Nunca	Quase nunca	Durante algum tempo	A maior parte do tempo	Quase sempre	Sempre

mês que passou, se sentiu calma e em paz? (17)						
3. Durante quanto tempo, no mês passado, se sentiu triste e em baixo? (19)	Nunca	Quase nunca	Durante algum tempo	A maior parte do tempo	Quase sempre	Sempre
4. Durante quanto tempo, durante o último mês que passou, se sentiu triste e em baixo, de tal como que nada a conseguia animar? (27)	Nunca	Quase nunca	Com pouca frequência	Frequentemente	Com muita frequência	Sempre
5. No último mês, durante quanto tempo se sentiu uma pessoa feliz? (34)	Nunca	Quase nunca	Durante algum tempo	A maior parte do tempo	Quase sempre	Sempre

ESSS

A seguir vai encontrar várias afirmações, seguidas de cinco letras. Marque um círculo à volta da opção que melhor qualifica a sua forma de pensar.

1. Por vezes sinto-me só no mundo e sem apoio	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
2. Não saio com amigos tantas vezes quantas eu gostaria	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
3. Os amigos não me procuram tantas vezes quantas eu gostaria	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
4. Quando preciso de desabafar com alguém encontro facilmente amigos com quem o fazer	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
5. Mesmo nas situações mais embaraçosas, se precisar de apoio de emergência tenho várias pessoas a quem posso recorrer	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
6. Às vezes sinto falta de alguém verdadeiramente íntimo que me compreenda e com quem possa desabafar sobre coisas íntimas	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
7. Sinto falta de atividades sociais que me	Concordo	Concordo na maior	Não concordo	Discordo na maior	Discordo

satisfaçam	totalmente	parte	nem discordo	parte	totalmente
8. Gostava de participar mais em atividades de organizações (p. ex. clubes desportivos, escuteiros, partidos políticos, etc.)	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
9. Estou satisfeito com a forma como me relaciono com a minha família	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
10. Estou satisfeito com a quantidade de tempo que passo com a minha família	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
11. Estou satisfeito com o que faço em conjunto com a minha família	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
12. Estou satisfeito com a quantidade de amigos que tenho	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
13. Estou satisfeito com a quantidade de tempo que passo com os meus amigos	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
14. Estou satisfeito com as atividades e coisas que faço com o meu grupo de amigos	Concordo totalmente	Concordo na maior parte	Não concordo nem discordo	Discordo na maior parte	Discordo totalmente
15. Estou satisfeito com o	Concordo	Concordo	Não	Discordo	Discordo

tipo de amigos que tenho	totalmente	na maior parte	concordo nem discordo	na maior parte	totalmente

EPDS

Dado que teve um bebé há pouco tempo, gostaríamos de saber como se sente. Por favor, assinale a resposta que mais se aproxima dos seus sentimentos nos últimos 7 dias. Obrigado.

Nos últimos 7 dias:

1. Tenho sido capaz de me rir e ver o lado divertido das coisas.	Tanto como dantes	Menos do que antes	Muito menos do que antes	Nunca
2. Tenho tido esperança no futuro.	Tanta como sempre tive	Menos do que costumava ter	Muito menos do que costumava ter	Quase nenhuma
3. Tenho-me culpado sem necessidade quando as coisas correm mal.	Sim, a maioria das vezes	Sim, algumas vezes	Raramente	Não, nunca
4. Tenho estado ansiosa ou preocupada sem motivo.	Não, nunca	Quase nunca	Sim, por vezes	Sim, muitas vezes
5. Tenho-me sentido com medo ou muito assustada, sem motivo.	Sim, muitas vezes	Sim, por vezes	Não, raramente	Não, nunca
6. Tenho sentido que são coisas demais para mim.	Sim, a maioria das vezes não consigo resolvê-las	Sim, por vezes não tenho conseguido resolvê-las como antes	Não, a maioria das vezes resolvo-as como antes	Não, resolvo-as tão bem como antes
7. Tenho-me sentido tão infeliz	Sim,	Sim, por	Raramente	Não,

que durmo mal.	quase sempre	vezes		nunca
8. Tenho-me sentido triste ou muito infeliz.	Sim, quase sempre	Sim, muitas vezes	Raramente	Não, nunca
9. Tenho-me sentido tão infeliz que choro.	Sim, quase sempre	Sim, muitas vezes	Só às vezes	Não, nunca
10. Tive ideias de fazer mal a mim mesma.	Sim, muitas vezes	Por vezes	Muito raramente	Nunca

Gostaríamos, por último, de saber se tem conhecimento sobre o **direito universal, independentemente do estatuto legal**, relativo ao acesso a cuidados de saúde, assegurado pelo Sistema Nacional de Saúde português de forma gratuita para as seguintes populações: crianças com menos de 12 anos ☐, mulheres grávidas e mães recentes ☐, mulheres que recorrem a programas de planeamento familiar ☐, indivíduos com doenças crónicas e/ou contagiosas que constituam ameaça para a saúde pública ☐.

Agradecemos, uma vez mais, toda a sua disponibilidade e colaboração!