Title: Barriers and Facilitators to the recruitment of Black African women for research in the UK: Hard to engage and not hard to reach.

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Abstract

Background: Black African women living in the United Kingdom suffer from inequalities in health, care and maternity outcomes compared with their counterparts. Their presence has however been found to be lacking in life-saving healthcare research. As a result of a lack of engagement in healthcare research, some authors have classified them as “hard to reach”. However, in order to reduce the health inequalities experienced by this group, methods for engagement that would suit this population group would need to be explored. Therefore, this study set out to present an ethnic specific perspective of the barriers and facilitators to the recruitment of black African women to research from the researcher’s perspective. Method: Two studies were conducted aimed at the recruitment of Black African women in healthcare research. Proposed recruitment strategies included snowballing, social media (twitter, Facebook), flyers and collaboration with gatekeepers in two NHS trusts in London. The strategies were developed based on a review of literature, best practice ethics guidelines and consultations with experts in the field. Results: Successful recruitment strategies included snowball sampling, word of mouth, peer to peer recruitment and the use of influential members in the community. Existing recruitment strategies were found to be unsuitable to properly engage members of this community. In addition to this, ethical guidelines around informed consent and gatekeeping seem to impede the successful engagement of the members of this community. Conclusion: Proper methods of engagement are required to bridge the inequality gap. Therefore, it is important that ethical procedures, processes, and recruitment methods be reviewed such that it will take into consideration the cultural peculiarities of individuals within this community.

Introduction

Recent Maternal, Newborn and Infant Clinical Outcome Review programme (MBRACCE-UK) reports between 2018 and 2019 have highlighted the inequalities in health faced by Black African women living in the UK (Knight et al., 2018, Knight et al., 2019). The 2019 report showed that Black African women were 4 times more likely to die in pregnancy from all causes when compared to their Caucasian counterparts(Knight et al., 2019). Black women also have the highest risks of developing complications in pregnancy including but not limited to gestational diabetes and hypertension (Webster et al., 2019, Khalil et al., 2013, Urquia et al., 2012, Roberts and Cooper, 2001).

On the other hand, representation from this group has been found to be small or lacking in life saving research (Nelson et al., 2021, Smart et al., 2017, Godden et al., 2010). Existing frameworks and guidelines on health and social care research in the UK highlight the importance of bridging the gap of disparity in health outcomes (Jackson-Cole, 2019). One of the ways that this can be achieved is through encouraging research that involves diverse ethnic and racial minorities. Adequate ethnic representation in healthcare research not only enhances generalisability of study findings but also provides a guidance for health policymakers in a diversified population like the UK (Mattocks and Briscoe-Palmer, 2016). Arday and Union (2017) have argued that effective participation of Black and minority ethnic group (BME) in the evidence-based research will foster improved health outcomes in the UK (Arday and Union, 2017).

To reduce maternal mortality among black women, improvement in health research representation, access and interventions uptake should improve. Several reasons have been postulated for the lack of representation including problems with access and recruitment, which has led some researchers to label these groups as “hard to reach”/difficult to access/engage” or “unwilling to participate in research” (Shavers et al., 2001, Esegbona-Adeigbe, 2020, Ellard-Gray et al., 2015). However, emerging evidence especially in the United States, where there is a large population of Black Africans have shown that methods used for the recruitment of other ethnic groups do not suffice for the black ethnic group (Andrasik et al., 2021). Such literature especially with regards to the engagement of black African women is lacking in the UK.

Two of the researchers involved in the present studies self-identify as Black African immigrants living in the United Kingdom. This methods paper provides a snapshot of some of the challenges encountered during the recruitment of pregnant Black African women living in the UK for health research. It is believed that an insight into the experience and perceptions of BME researchers will enhance pragmatic strategies that will increase future participation and retention of Black African women across different areas of health and social care research (Arday and Union, 2017).

Therefore, this methods paper aims to:

a.) Present an ethnic- specific perspective of first-hand experience of the difficulties of recruitment to provide a greater understanding of the problem.

b.) Identify some barriers and facilitators to recruitment for Black African Women to research

c.) Report on strategies that have been used to successfully recruit black African women in the UK in qualitative and cross-sectional studies.

Methodological approach

Researchers positioning

This paper explores the experiences of BME doctoral students in recruitment and retention of research participants of BME background in health research. Their experiences stem from research conducted individually as part of the doctorate training. Although, the design of each study was tailored toward specific aims and objectives of the individual research project, the population for both were black African women. Specifically, the recruiting experience focused on perception of pregnant black African women to healthy eating advice offered in pregnancy and how black African women with a history of gestational diabetes mellitus (GDM) managed their lifestyle and condition during the pandemic lockdown.

The studies

Study 1 used the principles of constructivist grounded theory to explore how healthy eating advice is interpreted and understood by pregnant African immigrant women living in the UK. To identify factors considered significant including the barriers and facilitators to obtaining healthy eating advice from midwives in pregnancy.

Study 2 was an online survey exploring how pregnant women with Gestational Diabetes Mellitus (GDM) managed their health conditions during Covid-19 pandemic in the United Kingdom.

An overview of the studies, study objectives, participants, data collection method, study settings, inclusion/exclusion criteria have been presented in table 1

Table 1:

Study	**Study objective**	**Participants**	**Study settings**	**Data collection method**	**Inclusion criteria**	**Exclusion criteria**
Study 1	Barriers and facilitators to obtaining healthy eating advice in pregnancy	Pregnant immigrant African women 18 years and above attending antenatal clinics in the study sites	Two NHS trusts in the South of London	In-depth interviewing	•Pregnant African immigrant women living in the UK aged 18 years and above •Pregnant immigrant African women attending antenatal clinics in the study sites •African immigrants' ethnicity was self-reported.	• Less than 18 years. • Women who required dietary management in pregnancy.
Study 2	How pregnant women with GDM managed their lifestyle health condition during the COVID 19 pandemic	Pregnant African women living in the UK	Online	Survey	• Pregnant women over 18 years old with diagnosis of GDM	• Pregnant women with no diagnosis of GDM • Living outside the United Kingdom

					• Living in the United Kingdom • Access to internet	• No access to internet

Settings and participants

Purposive sampling for adult pregnant black African women was used to obtain a sample of pregnant Black African women for both studies. Recruitment of eligible participants took place between November 2020 and March 2021. The participants were literate in English or Creole. Creole is a pidgin language spoken in Sub-Saharan Africa.

Ethics

Ethical approval was obtained from the London Brent Health Research Authority for study 1 and the Ethical committee for Bournemouth University for both studies.

Informed consent

Informed consent was obtained from the participants in study 1 before interviewing commenced. For study 2, a statement indicating consent to participate in the research was included online as part of the participant information sheet document. Intending participants were asked to tick to indicate their consent before filling the online questionnaire survey.

Recruitment strategies

Recruitment for study 1 was originally facilitated by collaboration with two NHS trusts in the South of London. It was further facilitated by aligning with social support groups. Other recruitment strategies utilised in the two studies included utilising purposive sampling, snowballing sampling, word of mouth and flyers. The data collection instrument was developed based on literature reviews and consultations with experts in the field including senior lecturers in Public Health and Nutrition and Dietetics at Faculty of Health and Social Sciences, Bournemouth University.

Patient and Public Involvement (PPI)

PPI exercise was carried out for study 1 and involved interviews with a group of post-partum women, self-identified as African. They were approached during a church community event conducted by the Redeemed Christian Church of God (New beginning Chapel) in Bournemouth. These individuals were informed about the study and provided some feedback regarding their willingness to potentially participate in such a study. A summary of the study was sent to some midwives at Bournemouth University, Portsmouth campus and feedback was provided. The feedback helped in shaping the format of the demographic questionnaires and interview guides used in the study.

Results

Tables 2 and 3 reflect the participants profiles for the two studies.

Table 2: Participant profile study 1

Age (years)	
0-18 years	*
19-28 years	2
29-39 years	4
40-49 years	1
50+	*
Level of education	
No formal schooling	*
Elementary/primary schooling	*
Secondary/high school diploma or equivalent	1
College degree	2
Bachelor's degree	1
Postgraduate diploma	2
Master's degree	1
Doctorate degree	*
Country of birth	
Nigeria	6
United Kingdom	1
Marital status	

Married Divorced Civil partnership Separated Single Widowed	4 * * * 3 *
<u>Length of residence in the UK</u> Less than a year 1-5 years 6-9 years 10-14 years 15 years and above	 * 3 1 * 3
<u>Trimester</u> First (0-12 weeks) Second (13-27 weeks) Third trimester (28-43 weeks)	 * 1 6
<u>BMI (kg.m-2)</u> None recorded <30 30 -39.9 40 and above	 2 1 3 1
<u>Parity</u> Primiparous	 1

Multiparous	6

Successful recruitment

The studies successfully recruited 7 pregnant women for in-depth interviewing and 23 pregnant women for online survey. All the women recruited in study 2 had a history of gestational diabetes. Body mass indices were calculated based on self-reported anthropometric measurements for participants in study 1. The interviews lasted an average of 60-90 minutes for participants in study 1. All the interviews were conducted via either Microsoft Teams or Zoom. Theoretical saturation was reached at the end of the interviews.

Strategies that worked

- Snowball sampling
- Word of mouth
- Peer to peer recruitment
- Use of influential members of the community

Unsuccessful strategies

- Posters, leaflets
- Use of gatekeepers in the NHS
- Social media

Barriers to participation

The individuals who were eventually recruited to the study showed their willingness to engage in health research. However, from the point of the interviews during the PPI process up until the research process proper, Black African women indicated their willingness to participate in the research if they were comfortable with the individual who conducted the research. Several reasons have been extrapolated as barriers to participation. They have been divided into individual and sampling barriers.

Individual Barriers

Diverse cultural sub-classifications

Diverse religious, cultural backgrounds as well as ethnic sub-divisions among the BME communities were found by the authors as mitigating factors towards the successful recruitment of participants. Although they are classified as one, the BME group as a whole and the black community embedded therein is a heterogenous community made up of various sub-cultural groups. These sub-cultural groups are made of up peculiar characteristics. In this study, some participants who had a different cultural and/or religious background from that of the researcher were reluctant to engage throughout the period of the research interviews. Women were quick to enquire about the researcher's country of origin or try to speak the same language and if not responded to would decline from participation. For study 1, all the participants that were recruited were Nigerian women, identifying with the ethnicity of the researcher. Furthermore, it was observed that in one case, there were more incomplete responses to the demographic questionnaire distributed among a BME group with a different nationality as the researcher.

Mistrust among BME participants against research process

Mistrust of the research procedure has been identified by the authors as one of the barriers against recruiting and engaging the women for research. For instance, some of the participants highlighted the failure of previous studies they participated in, to reduce the experience of health inequalities in the BME communities. The belief that the findings of the research would not get to those authority to foster appropriate implementation of the research outcomes impeded the successful recruitment and retention of participants for both studies. Some of the participants made a point in highlighting the failure of previous studies they participated in to meet their needs.

Perceived breach of confidentiality

The authors noted that potential participants in the study were lost because of concerns over legal status and documentation. The potential participants were lost at the point of consent signing. They mentioned that the signing of consent obligated that their information would be made available to the authorities therefore they were withdrawing from the study.

Sampling barriers

Recruitment strategies

Participants that were eventually recruited for the studies were not directly recruited via posters and adverts or through social media but through other techniques including word of mouth, ‘influential’ individuals within the community, snowball sampling and peer to peer influence.

The African pregnant women refused to engage unless the invitation came from individuals that they were comfortable with. Even with study 2, whose recruitment strategy was the use of twitter and online social media, participants who were eventually recruited into the study were recruited using peer to peer influence, influential members of the community and snowballing. This stance had been also been reflected in the PPI exercise carried out prior to the study. For instance, during the process of PPI engagement for study 1, black women who agreed to take part in the research stipulated that they would only do that if the researcher was Black African. This PPI exercise took place in a different town from London, where the main recruitment for the study took place, therefore the individuals had no influence over the decisions of the study participants.

Gatekeeping

Related to sampling strategies is the need to identify key stakeholders at various levels of the organisation with the potential to influence the support base for the study. They are usually referred to as gatekeepers. Gatekeepers have been identified as individuals or institutions that have the power to either grant access or withhold access to a research population (ref).

Literature has mostly focused on the different ways in which gatekeepers influence participants decision to take part in the research. Literature has also highlighted the need to identify and develop relationships with gatekeepers to facilitate the recruitment process (ref). However, there are other issues that would need to be considered when identifying gatekeepers for the BME community.

Firstly, there’s the detail of the multiple layers of gatekeepers that are found in social research especially ones that involve hard-to-reach communities. In this instance, gatekeepers that were deemed appropriate were identified and relationships established that would develop trust before ethical approval was obtained. As the study sites were NHS trust hospitals in the UK, appropriate gatekeepers were regarded as the heads of the departments involved and the research department.

However, when the data collection was due to commence, it became apparent that there would be other individuals who were important to the research which is an important aspect of gatekeeping that is not usually captured in the ethical approval process. This is because ethical approval usually requires an upfront declaration of who the gatekeepers would be.

However, from these studies, the process of identification of potential gatekeepers can be iterative, involving initial contact, following up and identification of the actual gatekeepers. It is also a challenging process to identify who the actual gatekeepers are and when the gatekeeping role begins as gatekeepers often hold informal roles within the community.

To gain access directly to participants, there were other levels of gatekeepers that needed to be identified and enlisted. These individuals had no access to the research sites, neither were they heads of community organisations or religious organisations therefore, they would not generally be considered as primary gatekeepers for studies.

These were influential individuals who had lived in the community for years and gained the respect of the members of the community. Trusted by the community, they became the gatekeepers who were able to determine how the research would be carried out and who would participate in the research.

The influence of these community gatekeepers was found to be essential to the success of the study. As the study population were pregnant women from hospital trusts, the potential gatekeeper would have been a research nurse/midwife from the trust. It was however found that the black pregnant women who eventually agreed to take part in the research were known to a local influential woman.

Ethics and informed consent

Ethical guidelines such as written informed consent was developed to protect the dignity, rights, and welfare of research participants as well as the researchers. However, several participants in these studies were lost at the point of giving consent. The few that were eventually recruited looked to their community leaders including a pastor for approval before the consent form was signed. There was the fear that the paperwork involved in the written informed consent could be used by the authorities.

Discussion

As identified by the researchers, there is a degree of reticence by individuals within the BME towards their involvement in research and access to care. 16 participants in these studies had either a BMI over 30 or had been told by their healthcare provider that their BMI was over 30. All the participants in study 2 had gestational diabetes. Both are conditions which would require care and management.

Several studies have highlighted this reticence and proceeded to label the group as “hard to reach”, however, this study has identified that the reticence could have been caused by inappropriate recruitment strategies. Certain recruitment methods mentioned in research are more suitable to reach these individuals more than some in the UK. For instance, with regards to the barriers associated with diverse cultural classifications, research staff who are representative of the research participants racial/ethnic group has been indicated as an important facilitator to recruitment (George et al 2014). This has been reported in literature amongst the African Americans and immigrant Filipinos in the United States of America. For this study, representation was reduced to sub-cultural classifications. Participants were more comfortable with researchers who came from the same sub-cultural classification even within the same racial/ethnic group. A review of literature by (Shaghaghi et al., 2011) highlighted that the degree of compliance within ethnic minority populations to any study depended on the characteristics of the group and the researcher. This is the first study in the UK that has identified the need to encourage research participation and access to care using individuals of the same cultural ethnicity. Therefore, it is important to note that for immigrant black Africans living in the UK, there are multiple layers of socio-cultural intricacies. It behoves the researchers and policy makers to spend considerable amount of time to untangle these intricacies in order to be able to properly engage these individuals.

With regards to gatekeeping, Agbebiyi (Agbebiyi, 2013) identified peer gatekeeping as a layer of gatekeeping in research whereby the peer group influences consent/withdrawal of consent in a research project. Maclellan et al (MacLellan et al., 2017) reiterated this by referring to peer advocates as the link between the research institution, the researcher and the social world. to This has been highlighted in this study as an important influence in research participation. Identification of the right gatekeeper in research studies have been highlighted especially in research carried out by doctoral students in the UK. A study by Spacey et al (Spacey et al., 2020) which evaluated the experiences of doctoral students with gatekeepers, found that there was difficulty in identifying the right gatekeepers in research that involved the hard to reach populations. Although Spacey et al 2020 was an exploratory study with a limited number of participants and therefore the findings might be hard to generalise, the impact of the inability to identify the right gatekeepers can cause delays in recruitment, be time consuming and expensive. It can also mean that the individuals to whom the research should reach are unreachable. Identifying gatekeepers for a research within an ethnic population that has been described as ‘hard to reach’ requires proper knowledge of who can be regarded as the gatekeeper.

Furthermore, the ethical approval process considers the gatekeeping process as a static process whereby the researcher is expected to identify and develop relations with the gatekeeper prior to obtaining ethical approval for the study. The recruitment methods stipulated by ethic processes do not consider the fluidity of the system especially with regards to ethnic minority populations and the dependence on community and community leaders (George et al., 2014) and their peer groups. . On the other hand, (McAreavey and Das, 2013) has argued for the need to keep the gatekeeping process as dynamic, noting that the process of identifying gatekeepers changes. Flexibility and consideration should be given in ethical approval processes to the multiple layers of gatekeeping especially in qualitative research. This study has shown that the process of identifying appropriate gatekeepers especially amongst the BME is an ongoing process that requires constant change. The study has also shown that in some instances even though the official gatekeepers had given consent, potential participants would not engage in the study until there was a community gatekeeper/pivot individual involved. It would therefore be important to evaluate systems in such a way that engagement with official gatekeepers and identifying and engagement with community gatekeepers would be a parallel process occurring concurrently.

Recruitment strategies such as posters, leaflets, adverts, or written recruitment materials have been less successful in recruiting ethnic minority populations in previous studies(Symonds et al., 2012, Rooney et al., 2011). Such materials have been regarded as “distant” and “cold” even though the ethics process and research protocols in many institutions require these strategies to be adopted. This study has further highlighted the inability of these strategies to successfully aid in the recruitment and retention of black women in research.

The evaluation of the methods of this study indicates that we cannot assume that black African women are difficult to reach/engage, if we continue to encourage and use the same methods that have been proven as unsuccessful. The participants in this study showed their willingness to participate in research, if they were sure that their confidentiality was protected, their voices would be heard, and they felt comfortable with the researcher and gatekeeper. If research is supposed to benefit the community to which it is targeted, it is important to use recruitment and sampling approaches that work for the community otherwise participation in public health research from these communities would continue to be an issue and patient and public involvement (PPI) would continue to be a tick box exercise.

Strengths and weakness

Qualitative studies are very useful in gaining rich, detailed information and also provide a unique context to hitherto asked questions. Therefore, interviewing was used to explore the views of participants as regards hesitance to engage in the research as part of an on-going research process. Other views were evaluated by the researchers reflecting on existing literature, the research ethics process, the PPI, and the recruitment process. The total number of women involved across both studies was small, which has reduced the generalisability of these observations serving as a weakness of the research.

New contribution to the literature

There are on-going campaigns to bridge the inequality gap using lifestyle interventions, health promotions and changes in health policies. It is important to understand how some populations which had been hard to engage hitherto can and should be engaged. This research provides an understanding of the sampling and recruitment strategies that can be used especially in future research studies in the UK.

References

AGBEBIYI, A. 2013. Tiers of gatekeepers and ethical practice: researching adolescent students and sexually explicit online material. *International Journal of Social Research Methodology,* 16**,** 535-540.

ANDRASIK, M. P., BRODER, G. B., WALLACE, S. E., CHATURVEDI, R., MICHAEL, N. L., BOCK, S., BEYRER, C., OSESO, L., AINA, J. & LUCAS, J. 2021. Increasing Black, Indigenous and People of Color participation in clinical trials through community engagement and recruitment goal establishment. *PloS one,* 16**,** e0258858.

ARDAY, J. J. U. & UNION, C. 2017. Exploring black and minority ethnic (BME) doctoral students’ perceptions of an academic career.

ELLARD-GRAY, A., JEFFREY, N. K., CHOUBAK, M. & CRANN, S. E. J. I. J. O. Q. M. 2015. Finding the hidden participant: Solutions for recruiting hidden, hard-to-reach, and vulnerable populations. 14**,** 1609406915621420.

ESEGBONA-ADEIGBE, S. J. B. J. O. M. 2020. COVID-19 and the risk to black, Asian and minority ethnic women during pregnancy. 28**,** 718-723.

GEORGE, S., DURAN, N. & NORRIS, K. 2014. A systematic review of barriers and facilitators to minority research participation among African Americans, Latinos, Asian Americans, and Pacific Islanders. *American journal of public health,* 104**,** e16-e31.

GODDEN, S., AMBLER, G. & POLLOCK, A. M. J. J. O. M. E. 2010. Recruitment of minority ethnic groups into clinical cancer research trials to assess adherence to the principles of the Department of Health Research Governance Framework: national sources of data and general issues arising from a study in one hospital trust in England. 36**,** 358-362.

JACKSON-COLE, D. 2019. *Navigating Toward Success: Black and Minority Ethnic Students in Postgraduate Science, Technology, Engineering and Mathematics Courses in England.* University of East London.

KHALIL, A., REZENDE, J., AKOLEKAR, R., SYNGELAKI, A. & NICOLAIDES, K. 2013. Maternal racial origin and adverse pregnancy outcome: a cohort study. *Ultrasound in Obstetrics & Gynecology,* 41**,** 278-285.

KNIGHT, M., BUNCH, K., TUFFNELL, D., SHAKESPEARE, J., KOTNIS, R., KENYON, S. & JJ(EDS.), K. 2019. on behalf of MBRACCE-UK.

Saving Lives, Improving Mothers' care- Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2015-2017. .

KNIGHT, M., NAIR, M., TUFFNELL, D., SHAKESPEARE, J., KENYON, S. & KURINCZUK, J. 2018. on behalf of MBRRACE-UK. Saving Lives, Improving Mothers' Care-Lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2014-16. Oxford: National Perinatal Epidemiology Unit, University of Oxford.

MACLELLAN, J., SUREY, J., ABUBAKAR, I., STAGG, H. R. & MANNELL, J. J. H. R. J. 2017. Using peer advocates to improve access to services among hard-to-reach populations with hepatitis C: a qualitative study of client and provider relationships. 14**,** 1-9.

MATTOCKS, K. & BRISCOE-PALMER, S. J. E. P. S. 2016. Diversity, inclusion, and doctoral study: Challenges facing minority PhD students in the United Kingdom. 15**,** 476-492.

MCAREAVEY, R. & DAS, C. 2013. A delicate balancing act: Negotiating with gatekeepers for ethical research when researching minority communities. *International Journal of Qualitative Methods,* 12**,** 113-131.

NELSON, M., PATTON, A., ROBB, K., WELLER, D., SHEIKH, A., RAGUPATHY, K., MORRISON, D. & CAMPBELL, C. 2021. Experiences of cervical screening participation and non-participation in women from minority ethnic populations in Scotland. *Health Expectations*.

ROBERTS, J. & COOPER, D. W. 2001. Pathogenesis and genetics of pre-eclampsia. *The Lancet,* 357**,** 53-56.

ROONEY, L. K., BHOPAL, R., HALANI, L., LEVY, M. L., PARTRIDGE, M. R., NETUVELI, G., CAR, J., GRIFFITHS, C., ATKINSON, J. & LINDSAY, G. 2011. Promoting recruitment of minority ethnic groups into research: qualitative study exploring the views of South Asian people with asthma. *Journal of Public Health,* 33**,** 604-615.

SHAGHAGHI, A., BHOPAL, R. S. & SHEIKH, A. 2011. Approaches to recruiting 'hard-to-reach'populations into research: a review of the literature. *Health promotion perspectives,* 1**,** 86.

SHAVERS, V. L., LYNCH, C. F. & BURMEISTER, L. F. J. C. I. I. J. O. T. A. C. S. 2001. Factors that influence African-Americans' willingness to participate in medical research studies. 91**,** 233-236.

SMART, A., HARRISON, E. J. E. & HEALTH 2017. The under-representation of minority ethnic groups in UK medical research. 22**,** 65-82.

SPACEY, A., HARVEY, O., CASEY, C. J. J. O. F. & EDUCATION, H. 2020. Postgraduate researchers' experiences of accessing participants via gatekeepers:'wading through treacle!'. 1-18.

SYMONDS, R., LORD, K., MITCHELL, A. & RAGHAVAN, D. 2012. Recruitment of ethnic minorities into cancer clinical trials: experience from the front lines. *British journal of cancer,* 107**,** 1017-1021.

URQUIA, M. L., YING, I., GLAZIER, R. H., BERGER, H., DE SOUZA, L. R. & RAY, J. G. 2012. Serious preeclampsia among different immigrant groups. *Journal of Obstetrics and Gynaecology Canada,* 34**,** 348-352.

WEBSTER, L. M., BRAMHAM, K., SEED, P. T., HOMSY, M., WIDDOWS, K., WEBB, A. J., NELSON-PIERCY, C., MAGEE, L., THILAGANATHAN, B. & MYERS, J. E. 2019. Impact of ethnicity on adverse perinatal outcome in women with chronic hypertension: a cohort study. *Ultrasound in Obstetrics & Gynecology,* 54**,** 72-78.