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3 **Feasibility of using self-reported ethnicity in pregnancy according to the Gestation**
4 **Related Optimal Weight (GROW) classification: a cross-sectional study**

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6 **Short title:** Reliability of self-reported ethnicity in pregnant women

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Abstract

Objective

To evaluate the feasibility of self-reported ethnicity using the Gestation Related Optimal Growth (GROW) classification in a contemporary multicultural antenatal population.

Design

Cross-sectional study

Setting

Tertiary obstetric hospital in Melbourne, Australia

Population

Pregnant women attending antenatal clinic

Methods

We surveyed pregnant women during April-June 2016 regarding their understanding of the term 'ethnicity', and how they would classify the ethnicity of themselves, their partner and family members according to the Australian GROW classification.

Results

Two hundred and thirty five women completed the survey. When describing 'ethnicity', most women 103 (44%) chose multiple descriptors, most frequently country of birth (54%) and region of ancestry (47%). Interpretation of 'ethnicity' varied significantly between ethnic groups; those choosing 'country of birth' were more likely to identify as Indian (OR 3.5, $p=0.03$), whereas those choosing 'physical appearance' were more likely to identify as Chinese (OR 3.0, $p=0.047$). Thirty participants (13%) were unable to describe their ethnicity from the available GROW options. Sixty-one (26%) respondents' ethnicity was inconsistent with that of their parents' heritage. A further 35% had a partner of different ethnicity. The agreement between country of birth and self-reported ethnicity was only fair (kappa 0.73 (95%CI 0.64-0.82)).

Conclusions

This study confirms the complexity of defining ethnicity in contemporary multicultural settings. Self-reported ethnicity is often inaccurate, concepts of ethnicity vary by ethnic group and country of birth is a poor descriptive surrogate. Adjustment for maternal ethnicity should be undertaken with caution in the customised assessment of fetal growth.

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Key words: growth restriction, small for gestational age, ultrasound, estimated fetal weight, customised fetal growth, ethnicity

Tweetable abstract: Is self-reported maternal ethnicity reliable? We think not.

List of abbreviations used

GROW Gestation Related Optimal Weight

FGR Fetal growth restriction

SFH Symphysis-fundal height

US Ultrasound

SGA Small for gestational age

GA Gestational age

BMI Body mass index

AFI Amniotic fluid index

EFW Estimated fetal weight

Introduction

A major goal of antenatal care is the detection of fetal growth restriction (FGR), a leading risk factor for stillbirth¹⁻³ and long term morbidity^{4,5}. Antenatal identification of the small for gestational age (SGA) fetus has been shown to reduce the risk of stillbirth¹, yet an ongoing clinical challenge is differentiating the constitutionally small from the growth restricted. Improved identification of the pathologically small forms the basis of the Gestation Related Optimal Weight (GROW) customised growth charts developed by Gestation Network⁶. GROW customised centiles adjust the ultrasound-derived estimated fetal weight (EFW), or birthweight, for maternal height, weight, ethnicity, parity and fetal gender, in order to better identify those fetuses that have deviated from their genetic growth potential.

The validity of adjusting fetal growth standards according to maternal ethnicity is controversial. It has been suggested that smaller birthweights among some

ethnic groups may reflect socio-economic disadvantage rather than reduced genetic potential ^{7,8}, and thus adjusting fetal growth expectations for these groups runs the risk of adjusting to perinatal disadvantage. Further, the precision of a mathematical adjustment for ethnicity is undermined by the fact there is no 'gold standard' for defining ethnicity. This is evidenced by British guidelines that state that ethnicity encompasses "common ancestry and elements of culture, identity, religion, language and physical appearance", and that emphasise the "subjective, multifaceted and changing nature of ethnic identification"⁹.

Added to these concerns is that the feasibility and reliability of assigning ethnicity according to the pre-specified categories available in the GROW algorithms (see *Appendix S1*), has not been previously tested in a multicultural antenatal population. This is the focus of the current study.

Methods

This cross-sectional study was conducted between April and June 2016. It involved a convenience sample of 240 women attending antenatal clinics in a public tertiary obstetric hospital in Melbourne, Australia. This hospital is responsible for nearly 6,000 births annually; 38% of maternity patients are born overseas, 20% primarily speak a language other than English ¹⁰, and 4% of patients require the services of an interpreter ¹¹.

Respondents' names were randomly selected by time of arrival to the antenatal clinic waiting room, to minimise selection bias. They were administered an online secure survey using SurveyMonkey ® while waiting for their appointment. The survey (see *Appendix S2* for full survey) asked women what they understood of the term 'ethnicity', choosing at least one descriptor from a list including language, religion, country of birth, physical appearance, region of ancestry, country of citizenship and other. They were then asked to state their ethnicity, choosing from the 25 available options for the Australian population provided by Gestation Network in the GROW software (*Appendix S1*). As per the

GROW software, no definition of 'ethnicity' was provided. Given the Australian GROW list does not provide the opportunity to describe ethnicity as 'mixed', 'unknown' or 'other', these options were added in our survey. Where possible, women were asked to state the ethnicity of their parents, that of the baby's father and his parents. Finally, given it is a commonly reported surrogate for ethnicity, women were asked to state their country of birth to enable comparison with self-identified ethnicity. Once completed, participants were unable to alter previous responses.

The survey was not formally validated, but was piloted among patients and clinicians in the Department of Perinatal Medicine at our hospital prior to commencement of the study. Statistical analysis was conducted using STATA v13IC software (StataCorp, College Station, TX, USA). Two-tailed p-values of less than 0.05 were treated as being indicative of statistical significance.

Prevalence of individual ethnicity descriptors were reported as percentage with corresponding binomial 95% confidence intervals (95% CIs). The adjusted association between individual descriptors and self-reported ethnicity (Australian European, Indian, or Chinese) was investigated using logistic regression modelling with a specific ethnicity (dichotomized as yes/no) as the dependent variable and individual descriptors (language, religion, country of birth, physical appearance, region of ancestry, country of citizenship, other) as independent variables. The effects were reported as Odds Ratios (OR) with corresponding 95% CIs. The agreement between self-reported ethnicity and country of birth was estimated using Cohen's kappa.

Ethics approval for this study was obtained from the Mercy Health Human Research Ethics Committee (R16/11) and written informed consent was obtained from all participants.

Results

Of 240 women attending antenatal clinic, 235 (98%) agreed to participate. Sixty-seven (29%) participants reported speaking English as a second language, but none required the services of an interpreter.

Pregnant women's understanding of 'ethnicity'

When asked to define 'ethnicity', the most common answer provided was country of birth (n=128, 54% (95% confidence interval (CI) 48-61%)), followed by region of ancestry (n=111, 47% (95% CI 41-54%)). Language, religion, physical appearance and country of citizenship were included in the responses of 23% (95% CI 17-28%), 20% (95% CI 15-26%), 16% (95% CI 11-21%) and 11% (95% CI 7-16%) of women respectively (*Figure 1*). Nearly half (n=103, 44% (95% CI 37-50%)) of respondents chose more than one descriptor.

Variations in interpretation of 'ethnicity' by self-reported ethnicity

How women described 'ethnicity' varied significantly according to their self-reported ethnicity. *Figure 2* demonstrates the varied response to the descriptors in the three main ethnic groups in the study population – *Australian European* (n=92, 40% (33-46%)), *Indian* (n=19, 8% (5-13%)) and *Chinese* (n=19, 8% (5-12%)). If a participant chose 'language' to describe ethnicity in the first question, she was significantly less likely to identify as Australian in the subsequent question (adjusted odds ratio 0.35 (95% CI 0.16-0.74), p=0.006). If she chose 'country of birth' to describe ethnicity, she was over three times more likely to subsequently identify as Indian (aOR 3.5 (1.1-11.3), p=0.03). If she chose 'physical appearance' she was three times more likely to describe herself as Chinese (aOR 3.0 (1.0-8.9), p=0.047).

GROW self-reported ethnicity

When asked to describe their ethnicity according to the options provided in the GROW program, 30 (13% (8-17%)) participants could not choose a single ethnicity from the list, with 25 (11% (7-15%)) choosing 'mixed' and 5 (2% (0-4%)) choosing 'other'. *Table 1* summarises the proportion of women who were unable to choose a single ethnicity from the prescribed list to describe themselves, the father of the baby (FOB), or their parents.

Self-reported ethnicity and pregnant women's family

The participant's chosen ethnicity was inconsistent with the ethnicity she assigned to her parents in 61 (26% (20-32%)) cases. This was either because the ethnicities of her parents were different to each other (i.e. she was of mixed ethnicity; n=40, 17% (12-22%)), or because her parents were the same ethnicity but she described herself as different (n=21, 9% (5-13%)). This was commonly because the participant chose *Australian European* for herself but *Southern European* for both her parents.

In relation to her partner, 69 (35% (28-41%)) of participants described their partner as a different ethnicity to themselves. One participant described herself as *Australian European* and the father of the baby as *Indian*. If evaluated as *Australian European* this baby would be on the 10.1st percentile, whereas it would be on the 16.3rd percentile if evaluated as *Indian*, according to the GROW software⁶ for a 3000g baby at 40 weeks to a nulliparous woman of average height (162cm) and booking weight (71kg) ¹².

Self-reported ethnicity versus country of birth

Country of birth is commonly used as a surrogate for ethnicity, yet participants' self-described ethnicity was discordant with her country of birth in 42 (18% (13-23%)) cases. For example, one participant described herself as a mix of Central/Western European and South East Asian, yet Australian-born. For the cohort overall, the agreement between self-reported ethnicity and country of birth was fair (kappa = 0.73 (95%CI 0.64-0.82)). All women describing themselves as *Australian European* were born in Australia. However, only two thirds of *British Europeans* were born in Britain, and one quarter of *Southern Europeans* were born in Southern Europe. Many of the self-described *Southern Europeans* were born in Australia (n=12). The effect of choosing to describe themselves as *Southern European* instead of *Australian European* on the calculation of their baby's weight percentile would be 2.7 (12.8th versus 10.1th percentile), as calculated using GROW software⁶ for a 3000g baby at 40 weeks to a nulliparous woman of average height (162cm) and booking weight (71kg) ¹².

Discussion

This study has identified challenges of feasibility when customising fetal growth according to self-reported maternal ethnicity in a multi-cultural population.

Main findings

A significant minority of women were unable to accurately describe their ethnicity according to the GROW options available, most commonly because ethnicity was mixed. This is perhaps unsurprising in a multi-cultural society such as Australia with high rates of immigration and inter-ethnic marriage. In 2011, 29% of women who gave birth in Australia were born overseas¹³. Similarly in the UK, 26% of women who gave birth in 2014 were born overseas¹⁴. Multi-cultural marriages comprised over half of marriages registered in Australia in 1998 (52%), which was substantially higher than in 1974 (39%)¹⁵. In the UK, 12% of marriages are inter-ethnic¹⁶. This means inaccuracies of classification will inexorably increase with time; over half of babies born to this cohort will themselves be classified as mixed ethnicity, because the ethnicity of the baby's mother is mixed (observed in 11%), the ethnicity of the baby's father is mixed (seen in a further 12%), or the mother and father are of different ethnicities (seen in 35%). A recent study comparing genetic ancestry to self-reported ethnicity found that genetic admixture increases over time. Younger participants were more likely to have mixed self-reported ethnicity and mixed genetic ancestry, as a result of increasing exogamy over time¹⁷. While adjustment coefficients have been developed for some common combinations of ethnicities, it seems unlikely that coefficients of accuracy can be determined for the endless possibilities of mixed ethnicities.

This study has also unmasked differences and uncertainty in interpreting the term 'ethnicity'. There is no gold standard for the definition of ethnicity, with expert groups highlighting its subjective nature. The Australian Standard Classification of Cultural and Ethnic Groups (ASCCEG)¹⁸ defines ethnicity as "the

shared identity or similarity of a group of people on the basis of one or more factors”, which may include a common geographic origin, language, religion or cultural tradition, and that identity is self-perceived. Consistent with this definition, nearly half of our respondents (44%) chose more than one descriptor to describe ethnicity, most commonly country of birth and region of ancestry. In this respect, pregnant women reflect expert opinion that ethnicity definitions are subjective, multi-faceted and fluid ¹³. The apparent inability to succinctly classify ethnicity mirrors a study that identified over 100 ways to describe ethnicity ¹⁹. Furthermore, this study identified for the first time that that how pregnant women *understand* ethnicity varies according to their self-reported ethnic group. We found that some ethnic groups identify primarily with country of birth, while others describe ethnicity preferentially in terms of religion, physical appearance or language. This further undermines the validity of self-reported ethnicity as a biological variable that can be reliably measured, and for which there can be robust mathematical adjustment.

Country of birth – while widely used as a surrogate for ethnicity – was not found to be a reliable representation of women’s ethnic group in this cohort. Even for women who chose country of birth as a factor to describe ethnicity, the agreement between their self-reported ethnicity and country of birth was only fair. While women’s country of birth is an important variable to collect as it may provide important insights into perinatal outcomes among native compared to immigrant women^{9,20}, our study highlights that country of birth cannot be considered a reliable measure of biological variation between different ethnic groups.

This study adds to existing concerns about the physiological basis for adjusting birthweight standards by different ethnic groups. Many ethnic groups with smaller babies are also at higher risk of perinatal disadvantage, and customisation by ethnicity may therefore mask increased perinatal risks. In Australia, infants of Aboriginal and Torres Strait Islander mothers are twice as likely to born SGA¹³, but are also at higher risk of preterm birth and perinatal mortality²¹. Similar findings have been shown in the USA for infants of Black and

Hispanic women^{7,22}. This suggests that infant smallness in these ethnic groups is more likely to be pathological than constitutional, and may be due to differences in socio-demographic, nutritional and environmental exposures that adversely affect fetal growth. Furthermore, the Intergrowth 21 Fetal Longitudinal Growth Study demonstrated very similar fetal growth in 8 diverse ethno-geographic study sites where pregnant women were free from demographic, nutritional, environmental or socio-economic mediated health disadvantage²³. To normalise small babies in disadvantaged populations through customisation runs the risk of misclassifying genuinely growth-restricted babies as 'constitutionally small'.

Strengths and limitations

Strengths of the study include the large sample size in a multicultural population, and collecting information about the woman's partner and their parents to inform expected ethnic mix of the fetus, arguably the most important variable. Furthermore, this study reports women's own understanding of ethnicity and how this varies according to self-identified ethnicity, which has not previously been reported.

This study had several limitations. Firstly, logistic constraints meant that women requiring an interpreter were excluded. Nevertheless, the study population included many women who spoke English as a second language, and this proportion was equivalent to that of our hospital population. Secondly, the term 'region of ancestry' is unclear. Participants said that they interpreted 'region of ancestry' to be their parents' or grandparents' generation, while another said it was "as long as you can remember". This ambiguity may have resulted in an overuse of this ethnic descriptor. Thirdly, Australia is one of the most ethnically diverse countries in the world, so the findings of this study may not be generalisable to all settings.

This study did not explore how health professionals defined ethnicity, which could be explored in future studies. This would be beneficial as health professionals themselves may make these judgements if they were to use ethnic-

specific growth charts. Additionally, future studies could compare genetic ancestry with self-reported ethnicity. This would likely unmask further complexities, given the degree of genetic admixture identified in other studies, one finding that 17% of subjects had genetics from at least two continents¹⁷.

Interpretation

This study confirms the complexity of defining ethnicity in contemporary multicultural settings, with 13% of participants being unable to categorise themselves according to the GROW classification. Self-reported ethnicity is unreliable, concepts of ethnicity vary by ethnic group and country of birth is a poor descriptive surrogate. We suggest that maternal self-reported ethnicity is an unreliable measure with which to adjust expectations of fetal growth.

Conclusion

Maternal self-report of ethnicity is neither feasible nor accurate. Pregnant women's interpretation of 'ethnicity' is highly variable with significant differences observed between different ethnic groups. Ethnic diversity within families, coupled with contemporary migration trends, make self-reported ethnicity – using the options presented in the GROW customisation model – an unreliable measure in a multicultural antenatal population. We suggest that including ethnicity in customisation models clouds, rather than clarifies, interpretation of fetal growth, and should be undertaken with caution.

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Disclosures of interest

We have no disclosures of interest to declare. The ICMJE disclosure forms are available as online supporting information.

Funding Declarations

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Contribution to authorship

Lockie EB: Developed idea for the project, planned project, completed ethics application, conducted questionnaires, wrote manuscript.

McCarthy EA: Contributed to development of project, piloted questionnaire, drafted and reviewed manuscript

Hui L: Contributed to development of project, piloted questionnaire, drafted and reviewed manuscript

Churilov L: Responsible for statistical advice and analysis, drafted and reviewed manuscript

Walker SP: Developed and supervised project, piloted questionnaire, drafted and reviewed manuscript

Ethics approval

Ethics approval for this study was obtained from the Mercy Health Human Research Ethics Committee (R16/11, 26th May 2016), and written informed consent was obtained from all participants.

References

1. Gardosi J, Madurasinghe V, Williams M, Malik A, Francis A. Maternal and fetal risk factors for stillbirth: population based study British Medical Journal. 2013;346:1-14.
2. Hirst JE, Villar J, Victora CG, Papageorgiou AT, Finkton D, Barros FC, et al. The antepartum stillbirth syndrome: risk factors and pregnancy conditions identified from the INTERGROWTH-21st project. Bjog. 2016.
3. Mendez-Figueroa H, Truong V, Pedroza C, Khan AM, Chauhan SP. Small-for-gestational-age infants among uncomplicated pregnancies at term: a secondary analysis of 9 Maternal-Fetal Medicine Units Network studies. American Journal of Obstetrics & Gynecology. 2016;215(5):628.e1-e7.
4. Murray E, Fernandes M, Fazel M, Kennedy SH, Villar J, Stein A. Differential effect of intrauterine growth restriction on childhood neurodevelopment: a systematic review. Bjog. 2015;122(8):1062-72.

5. Saenger P, Czernichow P, Hughes I, Reiter EO. Small for gestational age: short stature and beyond. *Endocrine Review*. 2007;28(2):219-51.
6. Gestation Network. GROW centile calculator, Australia v5.7.5.2.
7. Kramer MS, Ananth CV, Platt RW, Joseph KS. US Black vs White disparities in foetal growth: physiological or pathological? *International journal of epidemiology*. 2006;35(5):1187-95.
8. Bryant AS, Worjolah A, Caughey AB, Washington AE. Racial/ethnic disparities in obstetric outcomes and care: prevalence and determinants. *American Journal of Obstetrics & Gynecology*. 2010;202(4):335-43.
9. Almeida LM, Caldas J, Ayres-de-Campos D, Salcedo-Barrientos D, Dias S. Maternal healthcare in migrants: a systematic review. *Maternal Child Health Journal*. 2013;17(8):1346-54.
10. Bergin H, Walker S, Wood G, Hui L, editors. Successful implementation of new management guidelines and a specialized clinic for hepatitis B positive pregnant women. Royal Australian and New Zealand College of Obstetricians and Gynaecologists 2016 Annual Scientific Meeting; 2016 October 16-19; Perth, Australia.
11. Nesvadba N. Mercy Public Hospitals Inc. (MPHI) Demographic profile 2015/16. In: Lockie E, editor. 2016.
12. Australian Health Survey: First Results, 2011-12. In: Statistics ABo, editor. 2012.
13. Li Z, Zeki R, Hilder L, Sullivan EA. Australia's mothers and babies 2011. 28 ed: Australian Institute of Health and Welfare; 2011.
14. Office of National Statistics. Parents' Country of Birth, England and Wales: 20142015. Available from: <https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/livebirths/bulletins/parentscountryofbirthenglandandwales/2015-08-27>.
15. Australian Bureau of Statistics. Family Formation: Cultural diversity in marriages 2000 [Available from: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/2f762f95845417aeca25706c00834efa/c414ec2a595eb029ca2570ec000e2817!OpenDocument>.

16. Office of National Statistics. 2011 census analysis: what does the 2011 census tell us about inter-ethnic relationships? 2014. Available from: <http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/marriagecohabitationandcivilpartnerships/articles/whatdoesthe2011censustellusaboutinterethnicrelationships/2014-07-03>.
17. Banda Y, Kvale MN, Hoffmann TJ, Hesselson SE, Ranatunga D, Tang H, et al. Characterizing Race/Ethnicity and Genetic Ancestry for 100,000 Subjects in the Genetic Epidemiology Research on Adult Health and Aging (GERA) Cohort. *Genetics*. 2015;200(4):1285-95.
18. Australian Bureau of Statistics. Australian standard classification of cultural and ethnic groups (ASCCEG) 2011 [updated 2016 July 18. Available from: <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/1249.0MainFeatures12016?opendocument&tabname=Summary&prodno=1249.0&issue=2016&num=&view=>.
19. Ma IW, Khan NA, Kang A, Zalunardo N, Palepu A. Systematic review identified suboptimal reporting and use of race/ethnicity in general medical journals. *J Clin Epidemiol*. 2007;60(6):572-8.
20. Dahlen HG, Schmied V, Dennis C, Thornton C. Rates of obstetric intervention during birth and selected maternal and perinatal outcomes for low risk women born in Australia compared to those born overseas. *BMC Pregnancy Childbirth*. 2013;13(100):1-9.
21. Ballesteras T, on behalf of the Perinatal and Infant Mortality Committee of Western Australia The 14th report of the perinatal and infant mortality committee of Western Australia for deaths in the triennium 2008-2010. In: Government of Western Australia DoH, editor. 2014.
22. Alexander GK, M.; Bader, D.; Carlo, W.; Allen, M.; Mor, J. US birthweight/gestational age-specific neonatal mortality: 1995-1997 for Whites, Hispanics and Blacks. *Pediatrics* 2003;111(1):61-6.
23. Villar J, Papageorgiou AT, Pang R, Ohuma EO, Cheikh Ismail L, Barros FC, et al. The likeness of fetal growth and newborn size across non-isolated populations in the INTERGROWTH-21st Project: the Fetal Growth Longitudinal Study and Newborn Cross-Sectional Study. *The Lancet: Diabetes & Endocrinology*. 2014;2:781-92.

Figures, tables & appendices

Figure 1. Descriptors for the term 'ethnicity' chosen by an Australian antenatal population

Figure 2. Factors chosen to describe ethnicity by women who self-identified as Australian, Indian or Chinese

Table 1: Percentage of ethnicity (participants and family members) according to the GROW options

Appendix S1: Australian GROW ethnicity list

Appendix S2: Survey

Table 1: Percentage of ethnicity (participants and family members) according to the GROW options.

	Participant	Her mother	Her father	Father of Baby	FOB mother	FOB father
Able to select a GROW option (%)	87	93	91	84	93	91
Total (%) who could not choose	13	7	9	16	7	9
1. Unknown	0	1	2	1	2	3
2. Mixed	11	4	5	12	2	2
3. Other*	2	2	3	4	3	4

*Other: Argentina, Chile, Sri Lanka, Libya, Serbia, Zimbabwe, Mauritius, Congo, Macedonia

Figure 1. Descriptors for the term 'ethnicity' chosen by an Australian antenatal population

Figure 2. Factors chosen to describe ethnicity by women who self-identified as Australian, Indian or Chinese

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