

LCHS7001

Practice-Based Research

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overview

- Introduction
- Rational of study
- Risk factors associated with AMA
- Factors contributing to AMA
- Aim of study
- Research question
- Objectives
- Methodology
- Data analysis
- Implication of study
- Plan of work
- References

INTRODUCTION

WHAT IS ADVANCED MATERNAL AGE(AMA)?

- Childbearing in a woman over 35 is the standard definition of advanced maternal age. Pregnancies among women older than the average biological reproductive age are becoming more common due to a combination of cultural, societal, and economic shifts as well as reproductive technology like egg donation(Montori et al, 2021).
- However, in numerous contemporary studies, the definition of Advanced Maternal Age (AMA) has been revised, with the cut-off age raised to 40 years (Radoń-Pokracka, 2019).

RATIONAL OF STUDY

✓ **Increased prevalence:**

- Over the last four decades in Europe, there has been a consistent upward trend in the average age of women during pregnancy. In 2009, more than one million births in Europe were to mothers aged 35 or older (Kurtovic-Kozaric et al ,2016)
- The period from 1982 to 2012 witnessed a significant increase in the number of live births to women over 40 in the UK, with this demographic shift more than quadrupling (Mills and Lavender 2014)
- In England and Wales, the mean childbearing age increased from 27.7 years in 1990 to 30.5 years in 2017, and the percentage of women with advanced maternal age who delivered live infants increased from 8.7% to 22.7% over the same period (Cao, et al, 2022).

✓ **Impact of AMA on fertility:**

- Fertility undergoes a gradual decline as women age, with this decline becoming noticeable from around the age of 32. This decline is primarily attributed to a reduction in both the quality and quantity of oocytes (egg cells) available for reproduction.as a result , demand for Assisted reproductive Technology (ART) arise (Attali and Yogev, 2021).

✓ **Complications associated with AMA**

- According to Montori et al (2021), research has investigated the links between advanced maternal age (AMA) and unfavorable perinatal results, stillbirth, pre-eclampsia, gestational hypertension, gestational diabetes mellitus (DM), preterm birth, the birth of a neonate with low birth weight (SGA), and the need for elective or emergency caesarean section.
- Another study conducted by Nieto et al , in 2019 underscores the existing perspective within the majority of research, highlighting the association between advanced maternal age (AMA) and an increased likelihood of adverse maternal and fetal outcomes. These outcomes comprise conditions such as preeclampsia (PE), gestational diabetes (GD), stillbirth, placenta previa (PP), intrauterine growth restriction (IUGR), premature birth, and the requirement for a cesarean section.
- Stillbirths: according to data from ONS, 2023, the stillbirth ratio was around 5 per 1000 births, and the highest ratio was 5.9 stillbirths per 1000 for women aged 40 and over.

Complications associated with AMA

- Pregnancy induced hypertension
- DM
- Maternal near miss
- Increased CD
- Malpresentatuion
- Maternal death
- Low apgar score
- NICU admission
- Pre term delivery
- Low birth weight
- Birth defects
- Chromosomal abnormalities
- Perinatal mortality

(Mehari et al 2020) (Berger et al 2021)

(Li, et al 2020) (Bekele, et al 2023)

Risk factors associated with AMA for mothers

Infertility and Assisted Reproductive Technologies: Older women may experience difficulties conceiving, leading to an increased use of assisted reproductive technologies (ART). The use of ART itself can be associated with certain risks (Seshadr et al, 2020).

Advanced maternal age (AMA) is linked to negative perinatal outcomes, including fetal mortality and adverse maternal consequences, such as emergency operative deliveries (Kortekaas, et al, 2020)

Operative deliveries: The risk of cesarean section increases with increasing maternal age(Rydahl, et al 2019).

Increased risk of miscarriage According to a study using data from Denmark, they found that: Women aged 35-39 had a 24.6% chance of a miscarriage when they became pregnant In contrast, women aged 20-24 had a lower risk of miscarriage, at 11.1%. (Mills and Lavender 2014)

Developmental Delays: Several epidemiological studies have identified a correlation between postponing motherhood and adverse effects on the offspring, including conditions like psychotic disorders, intellectual disabilities, autism, and neurodevelopmental disorders(Han et al, 2018).

Factors contributing AMA

- Many women aged 35 to 45 delay marriage, and effective contraception is widely available.
- there are more opportunities for education and career advancement. Maternal education strongly influences the use of contraception and the timing of childbirth.
- Surveys have shown that women often prioritize achieving career, educational, financial, and personal goals, as well as establishing stability in their marital relationships before planning pregnancy. However, it's important to note that older women may also be more prone to not using contraception correctly or consistently, which can lead to unintended pregnancies in this age group(Cooke and Davidge2019) ,

AIM OF STUDY

- “This study on pregnant women aged between 30-39, will investigate the complex factors contributing to the rising trend in pregnancy age and its associated health complications, with the goal of offering guidance and recommendations to expectant mothers for the minimization of risk during pregnancy.

RESEARCH QUESTION

- To investigate the risk factors associated with the age and health status of pregnant women and their infants, despite the numerous health complications associated with advanced maternal age, what are the underlying reasons for the increasing trend in pregnancy age?

Objectives of study

- To explore the risk factors linked to the maternal age of pregnant women and their infants.
- To understand the factors contributing to the rising trend in pregnancy age, despite the numerous health complications associated with advanced maternal age.
- To offer guidance and recommendations for expectant mothers to minimize the risk of complications.

Research Methodology

- This research will adopt a quantitative method.

Study population(non-probability sampling)

The study will on pregnant women aged 30-39 as the primary population.

- Our focused group will be pregnant women aged between 35-40.

Data collection

data will be gathered either with a survey or from existing records.

- Quantitative data collection
- Surveys: a structured questionnaire will be administered to a large sample of pregnant women, including those of AMA and younger age groups(30-40) The survey will collect data on pregnancy intentions, health behaviors, and medical history.
- Medical records: health records from healthcare facilities will be accessed to collect data on maternal and infant health outcomes including complications, birth weight, and neonatal health.

Data analysis technique

Implication of the study

- 1. Healthcare Guidance and Policies:** The study's findings can inform healthcare providers and policymakers about the specific needs and challenges faced by pregnant women in this age group. This information can lead to the development of more tailored healthcare guidance and policies.
- 2. Public Awareness:** The research can contribute to raising public awareness about the risks and benefits associated with delayed childbearing. This awareness can help women make informed decisions about family planning.
- 3. Improved Maternal and Fetal Health:** The study's recommendations may lead to improved maternal and fetal health outcomes for expectant mothers aged 30-39 by reducing health risks and complications during pregnancy.
- 4. Targeted Support Services:** Health institutions and support organizations may use the findings to create targeted support services for pregnant women in this age group, addressing their unique needs.
- 5. Career and Family Planning:** The research can empower women to consider the timing of pregnancy within the context of their career and family planning, offering insights into the advantages and challenges of delayed childbearing.

Plan of Work and Time Schedule

	Start date	End date
Research proposal	Week 1	Week 2
Ethical approval	Week 3	Week 4
Research design	Week 5	Week 6
Data collection	Week 7	Week 9
Data analysis	Week 10	week12
Final report	Week 13	Week 14
Finalizing and submit	week15	week16

References

- <https://doi.org/10.1016/j.tjog.2020.11.018> Montori, M.G., Martínez, A.Á., Álvarez, C.L., Cuchí, N.A., Alcalá, P.M. and Ruiz-Martínez, S., 2021. Advanced maternal age and adverse pregnancy outcomes: A cohort study. *Taiwanese Journal of Obstetrics and Gynecology*, 60(1), pp.119-124.
- <https://doi.org/10.1016/j.ejogrb.2016.08.038> Kurtovic-Kozaric, A., Mehinovic, L., Malesevic, R., Mesanovic, S., Jaros, T., Stomornjak-Vukadin, M., Mackic-Djurovic, M., Ibrulj, S., Kurtovic-Basic, I. and Kozaric, M., 2016. Ten-year trends in prevalence of Down syndrome in a developing country: impact of the maternal age and prenatal screening. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, 206, pp.79-83.
- <https://doi.org/10.1016/j.puhe.2022.02.015> Cao, J., Xu, W., Liu, Y., Zhang, B., Zhang, Y., Yu, T., Huang, T. and Zou, Y., 2022. Trends in maternal age and the relationship between advanced age and adverse pregnancy outcomes: a population-based register study in Wuhan, China, 2010–2017. *Public health*, 206, pp.8-14.
- <https://doi.org/10.1016/j.bpobgyn.2020.07.005> Frick, A.P., 2021. Advanced maternal age and adverse pregnancy outcomes. *Best practice & research Clinical obstetrics & gynaecology*, 70, pp.92-100.
- <https://doi.org/10.1016/j.bpobgyn.2020.06.006> Attali, E. and Yogev, Y., 2021. The impact of advanced maternal age on pregnancy outcome. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 70, pp.2-9.
- Radoń-Pokracka, M., Adrianowicz, B., Płonka, M., Danił, P., Nowak, M. and Huras, H., 2019. Evaluation of pregnancy outcomes at advanced maternal age. *Open access Macedonian journal of medical sciences*, 7(12), p.1951. <https://doi.org/10.3889%2Foamjms.2019.587>
- <https://link.springer.com/article/10.1186/s12884-019-2415-3> Claramonte Nieto, M., Meler Barrabes, E., Garcia Martínez, S., Gutiérrez Prat, M. and Serra Zantop, B., 2019. Impact of aging on obstetric outcomes: defining advanced maternal age in Barcelona. *BMC pregnancy and childbirth*, 19, pp.1-10.

- <https://doi.org/10.1016/j.bpobgyn.2020.06.012> Seshadri, S., Morris, G., Serhal, P. and Saab, W., 2021. Assisted conception in women of advanced maternal age. *Best Practice & Research Clinical Obstetrics & Gynaecology*, 70, pp.10-20.
- <https://doi.org/10.1111/aogs.13828> Kortekaas, J.C., Kazemier, B.M., Keulen, J.K., Bruinsma, A., Mol, B.W., Vandenbussche, F., Van Dillen, J. and De Miranda, E., 2020. Risk of adverse pregnancy outcomes of late-and postterm pregnancies in advanced maternal age: A national cohort study. *Acta obstetricia et gynecologica Scandinavica*, 99(8), pp.1022-1030.
- <https://doi.org/10.1016/j.ogrm.2014.01.004> Mills, T.A. and Lavender, T., 2014. Advanced maternal age. *Obstetrics, Gynaecology & Reproductive Medicine*, 24(3), pp.85-90.
- <https://doi.org/10.1016/j.bbr.2018.04.003> Han, W., Dong, X., Song, X., Cheng, L., Xie, L., Chen, H. and Jiang, L., 2018. Effects of advanced maternal age on cognitive and emotional development in offspring rats. *Behavioural Brain Research*, 353, pp.218-226.
- Cooke CM, Davidge ST. Advanced maternal age and the impact on maternal and offspring cardiovascular health. *Am J Physiol Heart Circ Physiol*. 2019 Aug 1;317(2):H387-H394. [doi: 10.1152/ajpheart.00045.2019](https://doi.org/10.1152/ajpheart.00045.2019). Epub 2019 Jun 14. PMID: 31199185.

- https://d1wqtxts1xzle7.cloudfront.net/104933106/Sharique_Ahmed_--_FINAL-libre.pdf?1691773838=&response-content-disposition=inline%3B+filename%3DQualitative_v_s_Quantitative_Research_A.pdf&Expires=1698956558&Signature=DCpEoYE4Kr2Pbfaxb3-DWTbKUHvPT-~tUr7R7ZQ8-BZq2h9sv~L9IsK8ERzF1tFqILsYUiF99GFUwUS~lCwD26Bmor6uyNZ3yX767cuekr9CYaL4T~lLbt~AEU8cRDrLwJUg-GpUpGpuv-68Lz9Vf-UCLOjfkekFrecxTCcrGnaklxBUB224cLI3SKiUGVxdBJETx0MHkXdxhrbYrfDBiCVG6CinqUCtKI9AHkcPFZD6j6gJehM04PgC1AwY3JZCUYzksqoeOpxQ9bqSjBkBIYcO9eZJvcSKe3~A2GJLDmaalzWGcXJ97f86MsjJnIRPFxlZ4VE~B-ZbLXtSMoWlog__&Key-Pair-Id=APKAJLOHF5GGSLRBV4ZA Ahmad, S., Wasim, S., Irfan, S., Gogoi, S., Srivastava, A. and Farheen, Z., 2019. Qualitative v/s. quantitative research-a summarized review. *population*, 1(2)
- <https://www.ons.gov.uk/>
- <https://doi.org/10.1371/journal.pone.0210655> Rydahl, E., Declercq, E., Juhl, M. and Maimburg, R.D., 2019. Cesarean section on a rise—Does advanced maternal age explain the increase? A population register-based study. *PloS one*, 14(1), p.e0210655.

- <https://doi.org/10.1186/s12884-020-2740-6> Mehari, M.A., Maeruf, H., Robles, C.C., Woldemariam, S., Adhena, T., Mulugeta, M., Haftu, A., Hagose, H. and Kumsa, H., 2020. Advanced maternal age pregnancy and its adverse obstetrical and perinatal outcomes in Ayder comprehensive specialized hospital, Northern Ethiopia, 2017: a comparative cross-sectional study. *BMC pregnancy and childbirth*, 20(1), pp.1-10.
- <https://doi.org/10.1016/j.diabres.2020.108044> Li, Y., Ren, X., He, L., Li, J., Zhang, S. and Chen, W., 2020. Maternal age and the risk of gestational diabetes mellitus: a systematic review and meta-analysis of over 120 million participants. *Diabetes research and clinical practice*, 162, p.108044
- <https://doi.org/10.1016/j.whi.2020.08.008> Berger, B.O., Wolfson, C., Reid, L.D. and Strobino, D.M., 2021. Adverse birth outcomes among women of advanced maternal age with and without health conditions in Maryland. *Women's Health Issues*, 31(1), pp.40-48.
- <https://doi.org/10.1177/20503121231201282> Bekele, G.G., Yohannes Roga, E., Gonfa, D.N., Yami, A.T., Fekene, D.B. and Kabale, W.D., 2023. The effects of advanced maternal age on perinatal mortality in Ethiopia: A systematic review and meta-analysis. *SAGE Open Medicine*, 11, p.20503121231201282.