Predictors of Timing of First Antenatal Clinic: A Systematic Review

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ABSTRACT

World Health Organization recommends that pregnant mothers do the first antenatal visit within the 12 weeks after conception. The goal of the review was to determine the predictors of first antenatal visit. A systematic review was conducted by retrieving and reviewing several papers that had been published in various journals. Boolean internet search method was used. Comprehensive search was conducted through various data bases such as Cochrane library, Google scholar, AMED, EMBASE Scopus and PubMed. Cochrane risk of bias tool was used to evaluate studies on the risk of bias. Articles reviewed included those papers that were published from January 2010 to July 2023. The reviews of the publication were done between October and November 2023. Articles that report the timing of first antenatal care were included. Only papers published in English were included. All abstracts with information of first antenatal care were included and then the full articles were retrieved for review. Data extracted included ANC attendance level, antenatal utilization, factors contributing to first antenatal visit timing, reasons for late antenatal visit after 16 weeks. Extraction also included year of publication, study design and the area where the study was done. After thorough searching, 9132 published papers were accessed through a method known as Boolean internet search. The initial screening established 56 papers without abstracts and ended up with 9076 papers. In step two, 8712 publications were removed because of quality, lack of relevance to timing of first antenatal care, not in English language while other were overview articles. In step three, 330 papers were excluded for being not related to predictors of first timing of antenatal care. Only 34 articles were considered eligible for the systematic review after inclusion and exclusion criteria was added. Narrative data synthesis was used to analyze data extracted from articles retrieved as per the inclusion and exclusion criteria. **Results**. Education appeared in 22 articles. Place of residence and distance were noted in 19 articles and 17 articles respectively. Several predictors of first antenatal visit were as follows: maternal age was observed in 21 articles, unplanned pregnancies (16), The level of attendance during first antenatal visit ranged from 47% to 57%. **Conclusion** Variables such as education, distance, quality of service complications of pregnancy and unplanned pregnancy were reported by many articles as predictors of early initiation of first antenatal visit. A big proportion of mothers do not utilize the first antenatal services. **Recommendations** it is recommended that awareness be created among communities on the importance of early antenatal visit.

Keywords: antenatal, early antenatal visits, prenatal, initial antenatal

INTRODUCTION

Antenatal care is the care provided to a pregnant mother from the conception until the establishment of labour whereas the first antenatal visit is the first contact with a skilled health worker. It is recommended

that pregnant mothers should visit antenatal clinic during the first trimester and not later than 16 weeks [1]. Globally it is estimated that antenatal visits increased from 40.9% (1990) to 58.6% in 2013. In developing countries it predicted that first antenatal visit is 48.1% compared to 84.8%.in developed countries [2]. The goal of antenatal care is to prevent and manage existing health problems that may be a threat to the life of the mother and baby and therefore reduce the causes of maternal and newborn morbidity and mortality. Reducing maternal mortality remains a top priority in Sustainable Development goal number 3 [3]. Maternal Mortality remains high Sub- Saharan Africa 66% (201000) out of global mortality of 303000 [4]. Majority of the maternal deaths are preventable, detectable and treatable [5]. Antenatal care is one of the strategies of maternal morbidities and mortalities. Proper utilization and timely initiation of antenatal care can significantly reduce the maternal and neonatal morbidities and mortalities [6]. The timing of first antenatal visit is essential because it determines the outcome of the pregnancy. Antenatal care guidelines put a lot of emphasis in the early initiation of first ANC visit [7] in order for the mother to be provided with the services. The first antenatal visit provides an opportunity for the mother to be assessed for various health problems such as nutritional deficiencies, sexually transmitted diseases, HIV, and non communicable disease (eg hypertension).

Antenatal attendance is usually delayed in Sub Saharan Africa. The delays results in serious consequences that have got heavy impact towards the health and life of both the newborn and the mother. In a Demographic Health Survey (2008 -2014) done in Kenya late initiation of antenatal attendance reduced from 67.8% to 60.5% [8].

The goal of this review was to determine the predictors of timing of the first antenatal visit.

MATERIALS AND METHODS

This was a systematic review conducted by retrieving and reviewing several papers that had been published in various journals. Boolean internet search method was used. Comprehensive search was conducted through various data bases such as Cochrane library, Google scholar, AMED, EMBASE Scopus and PubMed. Combination of Me Sh words and Key words such as 'first antenatal', 'initial antenatal', 'antenatal', 'prenatal' and 'prenatal care' were used to search for articles. Articles reviewed included those papers that were published from January 2010 to July 2023. The reviews of the publication were done between October and November 2023. Articles that report the timing of first antenatal care were included. Only papers published in English were included. All abstracts with information of first antenatal care were included and then the full articles were retrieved for review. Data extracted included ANC attendance level, antenatal utilization, factors contributing to first antenatal visit timing, reasons for late antenatal visit after 16 weeks. Extraction also included year of publication, study design and the area where the study was done.

After thorough searching, 9132 published papers were accessed through a method known as Boolean internet search. The initial screening established 56 papers without abstracts and ended up with 9076 papers. In step two, 8712 publications were removed because of quality, lack of relevance to timing of first antenatal care, not in English language while other was overview articles. In step three, 330 papers were excluded for being not related to predictors of first timing of antenatal care. Only 34 articles were considered eligible for the systematic review after inclusion and exclusion criteria was added. This review followed PRISMA screening guidelines. Narrative data synthesis was used to analyze data extracted from articles retrieved as per the inclusion and exclusion criteria. Mata analysis was not possible due to lack of homogeneity
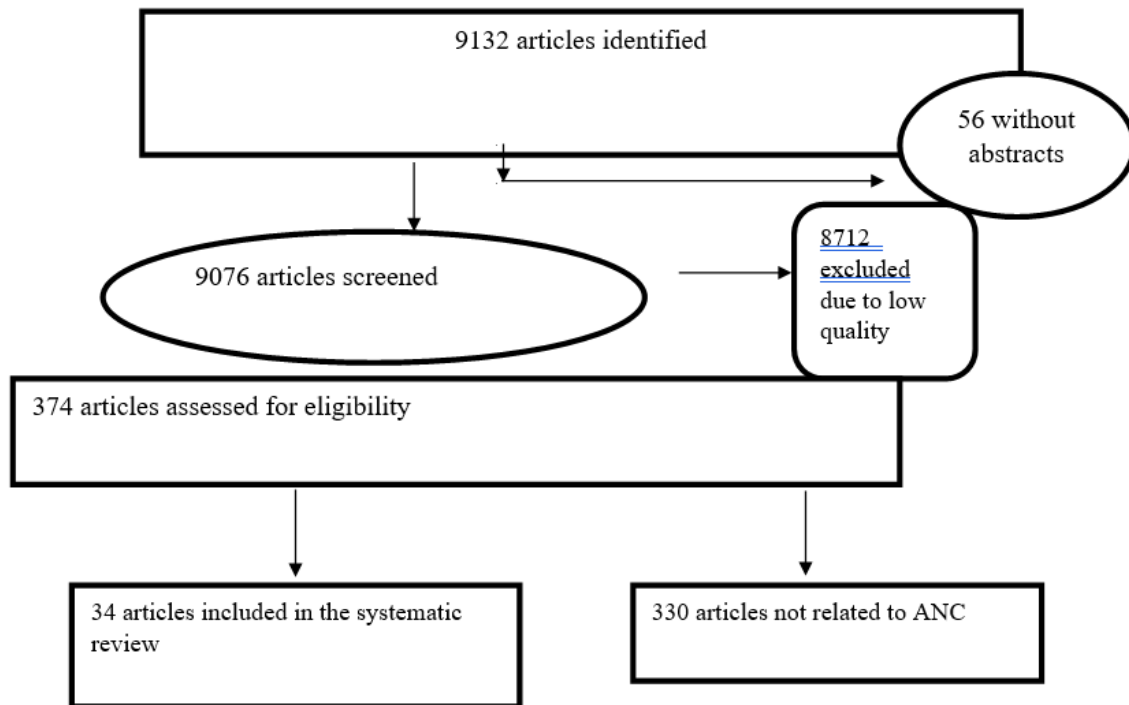
Figure 1.1 A PRISMA diagram showing screening of articles to analysis

RESULTS

A total of 34 articles were included in the review. The results of the review in 18 article show several predictors of antenatal care whereas 12 articles shown that first antenatal care can determine the outcome of the antenatal care. Many (14) articles show antenatal care can improve maternal health. Developing countries have high maternal mortalities as reported in 9 articles. Articles reviewed established several predictors of first antenatal clinic. Education as a predictor appeared in 22 articles. Place of residence and distance were noted in 19 articles and 17 articles respectively. Several predictors of first antenatal visit were as follows: maternal age was observed in 21 articles, unplanned pregnancies (16), wealth (being rich) 15, previous delivery (15) history of abortion (13), quality of service (17), media exposure (18), more than five household members (15), number of children (13), family support (10) and complications of pregnancy (12).

The level of attendance during first antenatal visit ranged from 47% to 57%. Majority of the articles showed that the morbidities and mortalities to both the mother and the baby increased with low or no attendance during the first antenatal visits.

DISCUSSION

Predictors of First Timing of Antenatal Visit

Level of education and place of residence [9] were reported to determine the first antenatal visit. Uneducated mothers are likely not to utilize antenatal care services [10]. Mothers who are educated have

ability to understand the concept and rationale of attending antenatal clinic. Similar finding show that secondary and higher education determine early timing of first antenatal visit [11]. Mothers with higher level of education are able to understand that in such an opportunity of visiting antenatal clinic will provide an opportunity for her to be examined and if there underlying health problems the service provider will detect them and give the necessary interventions. Mothers living far from health facilities [12, 13]. are not able to access the antenatal care services due to several challenges like transport, bus fare [14]. among others. Mothers who live far away from the health facilities are less likely to attend antenatal clinic visits [15].

Majority of the articles predicted maternal age as a factor that influence early timing of first antenatal visit. Young mothers less than 25 years are likely to start the antenatal clinic earlier than those mothers advanced in age [16]. Unplanned pregnancies contribute to women attending antenatal in second trimester [13]. It was observed that unplanned pregnancy is likely not to utilize ANC services [10]. Unplanned/ unwanted pregnancy pushes mothers to delay antenatal visit to second trimester. This happen because the mother is not interested in the pregnancy. Various reasons could have lead to such unwanted pregnancy such as rape could have occurred and the mother becomes mentally traumatized.

A study conducted in Ethiopia revealed that rich women are 3 times likely to attend first antenatal clinic visit earlier than poor mothers [17]. Mothers who are not financially stable may not have money for transport, pay hospital fee (for hospital that don't offer free maternity services [10] or even utilize the time for the visit to do an activity that may support her financially. Provision of free maternity services is a strategy that can improve utilization of antenatal care service [18].

Previous delivery and history of abortion [9] are predictors of early antenatal clinic visits. Places of previous delivery can influence the mother to seek antenatal services early depending on how she was handled by the service providers. Mothers who were satisfied with quality of services may like to go to the same health facility so as to achieve a better outcome. Mothers who were provided with a friendly environment may feel encouraged to start the antenatal visit early. Lack of resources such as equipments and service providers contribute to poor quality of services in health services [19]. The fear of a mother to lose the pregnancy may compel her to seek the antenatal services early so as to under the care of a skilled health worker.

Having a media exposure contribute to early initiations of first antenatal care visit [11]. Both electronic media is a good sensitization and empowerment tool and mothers who are exposed to such may become more knowledgeable in antenatal care and other related health issues. This is likely to help them make informed decisions about their health. Another study showed that awareness of booking time was a predictor to early timing of first antenatal care [20].

Mothers with a household of more than five members are likely to have late initiation of antenatal visit [11]. Women with more children (high parity) are likely to delay the first antenatal visit [19]. High parity mothers are likely not to attend the four antenatal visits as recommended by the WHO. Women with many family members are likely to be occupied and fail to get time to attend antenatal visit. Demand of resources for running the family may also contribute to the delay or failure to initiate the antenatal visit.

Family support influences early first antenatal visit [21]. The support may be from a husband or any other person living with the pregnant woman. In most parts of the world where the husband has a responsibility to provide for the family financially, he is therefore likely to influence the decision to visit the antenatal clinic.

Complications of pregnancy contributed towards the mother to make decision on when to start antenatal care visit [22] Antenatal mothers with health problems related to pregnancy or underlying problems may feel pressurized to seek the services of health workers to be assessed.

Level of Attendance of First Antenatal Visit

Majority of mothers (57%) attended first antenatal visit [23]. Attending antenatal visit early provides the health workers with an opportunity to examine the mother to detect any health problem and give the appropriate intervention. A slightly lower attendance level (50%) in Ethiopia [24]. A low level of attendance (21%) during the first ANC within the recommended time was reported elsewhere [16]. Approximately 47% of the mothers started their first antenatal visit before four weeks [25]. A lower level of first antenatal clinic attendance was reported in Central Ethiopia [20]. A health survey done in Afghanistan showed that level of attendance during the first antenatal visit was at 55.8% [26]. A lower attendance of first antenatal visit was reported in Ethiopia) where 62% of the mothers delayed for their first antenatal visit [27].

Consequences of Lack Antenatal Care

The effects of failure to attend antenatal care are increased morbidity and mortality rates [28].

Strengths and Limitations

This systematic review inclusion and exclusion criteria focused on first antenatal visit. The review also included a variety of primary original articles. However some studies were not focused to the first antenatal visit and this diminished the pool of the articles. Lack of homogeneity made the meta analysis impossible. The review covered several data bases. Only articles written in English were reviewed while other languages were excluded which eventually limit the generalization.

Conclusion Several variables such as education, distance, quality of service complications of pregnancy and unplanned pregnancy were reported by many articles as predictors of early initiation of first antenatal visit. A big proportion of mothers do not utilize the first antenatal services. This denies the service providers an opportunity to detect any health deviation in the mother or the foetus.

RECOMMENDATIONS

This systematic review recommends that communities be sensitized and empowered on the importance of early antennal visit so that the health workers can get an opportunity to detect maternal risk factors that are likely to compromise the health of the neonate and the mother and be provided with the necessary interventions.

Acknowledgement

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