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A Retrospective Study on Uterine Rupture at a Tertiary Hospital, India

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***Abstract*---**Objective: The study aims to understand the causes and the outcomes of uterine rupture in a 1-year retrospective study at a tertiary hospital in Raigarh, India. Methods: This study is a retrospective study of the patients who were diagnosed with the uterine rupture at the department of obstetrics (Gynecology) at GMC Raigarh Chhattisgarh from March 2015 to April2016.Data collection was done from the clinical assessments and with different exams of 61 participants following which the statistical analysis was done. Results: as per the findings, there were certain conditions such as the hemoperitoneum and the fetus outside uterus are the riskiest ones when it comes to uterine rupture. Conclusion: the most important findings were related to the frequent problems and risk factors associated rupture of uterus and certain age groups are more prone to this medical emergency which is why, right medical care is needed.

***Keywords*---**caesarian section, hysterectomy, prolonged labor, ruptured uterus.

Introduction

There are multiple critical causes that can cause the development of the problems with the rupture of the uterus can be plausible and there are therefore cardinal causes and risks that has to be managed medically and properly that is important to understand (1). This is generally caused due to the overweight put to the

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uterus and the uterus of the pregnant female is not being able to withstand the weight, thus leading to the causation of the rupture and the accompanying pain with the same that is important to note and understand as well. There can be presentation of an overweight fetus or possibilities of multiple ones that is the prime cause of the force being put on the uterus and the medically risky condition of fetal rupture being caused that is important to note and understand as well (2). As per the general statistics, the cause of such issues is generally due to the above-mentioned conditions and the average rate of such problems are one per the sixty-seven to the five hundred cases in different parts of the world that is vital to note and understand as well. This is not only a serious condition but also seen and regarded as one of the most complicated complications in the domain of obstetrics that is vital to note and pointed too (3). There is excess amount of what is called as the stretch load on the uterus of the individual, thus causing the rupture to occur and the situation to become problematic at the same time, which is a medical emergency. The reasons can also be the fetal version that can be happening externally or internally leading to the medical condition being discussed over here (4). The excessive and the problematic proliferation following certain kind of surgeries done in the abdominal areas and especially in the cases, where the organs has been removed – can also be a major reason for the causation of the risk and medical emergency of what is called as the fetal rupture leading to acute pain and foetomaternal complications that is important to understand. There are certain cases in which there is clinical presentation of what is called as the fetal contractions and too much of the same can also lead to the shock wave of each contraction to travel the length down and thus facilitates the rupture to be happening in the individual (5). In case of the multiple pregnancies, there is something called as the loss of the uterine function where the structure is not accommodating well to the changing anatomy and physiological needs of the body that is causing or rather leading to the development of the rupture causing more issues and risks (6). Another interesting fact is that if the caesarean section has been done before with the individual and the person is going for a vaginal delivery later, then there will be extra or additional release of the prostaglandins causing acute pain and increased risks of the uterine rupture that is vital to understand.

The symptoms of the medical condition that is uterine rupture in the obstetrics field are many and these are critical to assess plus medically manage. The signs and the symptom of the uterine rupture includes the severe or sudden uterine pain, fetal distress as well as the vaginal bleeding (moderate to severe) and the continuous set of the contractions in the uterus that is important to understand as well. The regression can be another very important difficult caused in the medical complication of the uterine rupture that is vital to understand. The main problem with this condition is that it can have adverse impact on both the health of the baby and that of the mother as well that is very important and also very vital as well. That is why, whenever there is some kind of signals that the uterine rupture is going to happen, or it has been found out that it occurred – the situation gets very alarming that is very important to understand as well. for the babies, the impact can be devasting as the rupture of the concerned structure that holds the fetus can lead to the development of the brain hemorrhage and brain damage in the newborn (7). There can be decreased heart rate of the baby in the fetus, and this is such as great risk concern in the prenatal condition itself.

Moreover, the acute severe pain in the ruptured uterus condition can be very much problematic for the mother, which is why, there is a need for the medical management or obstetrics care to be on point so that the life is saved and managed greatly (8). The assessments have to be done properly with respect to the size of the baby and the size of the uterus as well as the vitals are properly to be noted that as well is critical to note and understand as well. The interventions need to be planned properly and effectively as with this condition, the morbidity and the mortality rate can be a huge danger which is why, the management needs to be done effectively as well. The research objectives are:

- To understand the causes of the uterine rupture.
- To understand the management of the complication.
- To understand the risk factors and the necessary assessments that needs to be done.

Material and Methods

This study is a retrospective study of the patients who were diagnosed with the uterine rupture at the department of obstetrics (Gynecology) at GMC Raigarh, Chhattisgarh from March 2015 to April 2016. The patients who were clinically diagnosed of having the critical condition of the uterine rupture were included in the study so as to study the symptoms and plan the interventions as per the risks and complex management areas being found out that is important to note and understand as well. The data has been collected from the past events that makes this study, a retrospective one that is important to understand as well.

Research philosophy

The research philosophy taken and used over here is that of what is known widely as the positivist research which is because the quantitative work pertaining to the clinical data is concerned mostly in this study that is important to note and understand too. The three main criteria of this research that allows this research to be quantitative is the fact that the topic of medical complication of uterine rupture has been understood through the techniques of data observation and scientific clinical data measurement that is cardinal and critical too. Moreover, there are major aspects of the various types of the facts in place about the chosen clinical condition of uterine rupture that will be tested properly and then the new findings, if any different, will be found out accordingly that is important to note and understand as well. The clinical data used here such as the hysterectomy, myomectomy as well as the fetal mis-presentation and others are all objective in nature, and they will be used for the statistical representation in the graphs that is critical to note and understand as well (9). That is why, understanding the more cardinal areas of the data management and data integrity along with the clinical data management for better medical management of the complication that is uterine rupture – is important. That is why, it is very vital to point here the mathematic analysis and research design focused on the objective data has been given the right levels of the importance in order to sort out the risks and medical management areas, pertaining to the chosen condition here. The philosophy of this research is constantly strained by the fact that the different areas of complex points pertaining to clinical data needs to see carefully and assessed properly so

as to plan the intervention in uterine rupture, without any kind of serious errors (10). The importance of quantitative data in the medical discipline is very much critical and any mistake can lead to development of what is called as the adverse events and risky clinical outcomes. That is why, for this the positivist research philosophy is pertinent as to reduce any mistake with clarity or data management in the clinically settings.

Research approach

The research approach taken over is that of a descriptive one as the condition of the uterine rupture is known but its relation to the modern world environmental and the social, clinical conditions is not known properly which is why, the research work is undertaken over here with much effort. The aim is understanding the research problem that is the uterine rupture medical emergency better and that is why, a set of past data has been collected from a hospital in India. That is why, it is of particular importance that the description of the clinical nature of the emergency and associated progressing and aggravating factors is also well known, that makes the chosen descriptive research approach most important and also very much needed as well. While it is to be noted, that there is already a general understanding of the medical emergency situation of the uterine rupture, there is a need for the development of a specific protocol for the management of same, in the new post covid world (11). The more the new clinical correlations of the condition with the other symptoms can be made – the more explanation will be possible for this cause and risks and more described in nature, the intervention or in better words, the various types of the best practices in gynecology and obstetrics management will be – with respect to uterine rupture (12). With this approach, the research here will be able to explain the major elements of sepsis and the shock as well as the infections causing devasting outcomes as in the Fetomaternal condition – much better that is cardinal to note and understand. Moreover, there can renal and the respiratory issues as well that are not described by the previous research done with the uterine rupture condition and that is why, this will also be explained and described as well, in this research – making this one a specific from many aspects and of high importance as well.

Sampling

As gender was not a problem for this work, there was almost no risk of the gender bias that is important to note and understand as well. Therefore, there is a need for the development of the right participants set with exact condition (of uterine rupture) which is why, the convenient sampling has been used to include only the patients with the right condition and the right age group that is important to comprehend. The participant of this retrospective study (n = 21) has the primary diagnosis of the uterine rupture, and this is a serious condition being studied in this research work. It is to be noted that all cases in the research study has the full thickness uterine rupture with the acute bleeding needing the emergency operative intervention that is cardinal to understand.

Inclusion criteria

- Patients with clinically diagnosed uterine rupture.
- Patients were above the age of the 20 years that is important to note.

Exclusion criteria

- Patients were not clinically diagnosed with uterine rupture (patients were without the symptoms and the signs of the medical condition that is the topic of the research).
- Patients below the age of 20 years

Data collection

The quantitative data was collected in terms of the age, risk factors, intraoperative findings, surgery, fetal as well as the other outcomes. These are completely quantitative in nature.

Data analysis

The statistical analysis of the data was done in order to understand the right subject matter areas critically and objectively which needs more risk management and clinical management as compared to the other that is very important to note and understand too. The data of these patients were complied and analyzed with relation to demographics, clinical signs and symptoms, risk factors, maternal and the fetal outcomes as well as the post operative outcomes.

Results

Table 1
Age distribution

Age	Respondents	No of Patients	Percentage
More than equal to 20 years	21	0	O
21-30 years	21	11	52.3
>30 years	21	10	47.6

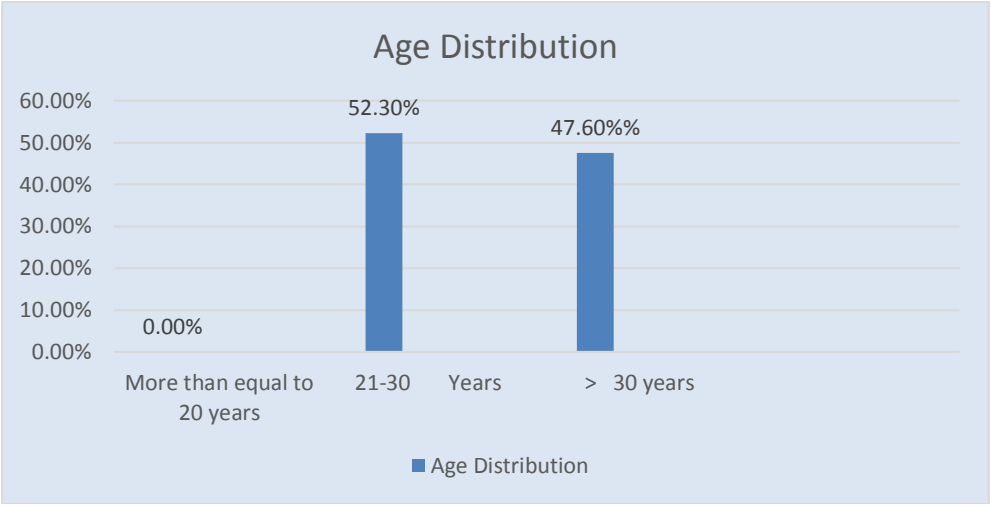

Figure 1. Age distribution

Table 2
Gravidity

	Response	Respondents
Primi	1	21
Multi	20	21

Table 3
Risk factors of uterine rupture

	Response	Respondents	Percentage
Previous 1 LTCS	8	21	38 %
Previous 2 LTCS	1	21	4.7 %
Prior classical	0	21	0
Prior myomectomy	0	21	0
Prior hysterectomy	0	21	0
Grand multiparae	3	21	14.2 %
Obstructed labor	6	21	28.5 %
Fetal malpresentation	3	21	14.2 %
Induction of labor	0	21	0

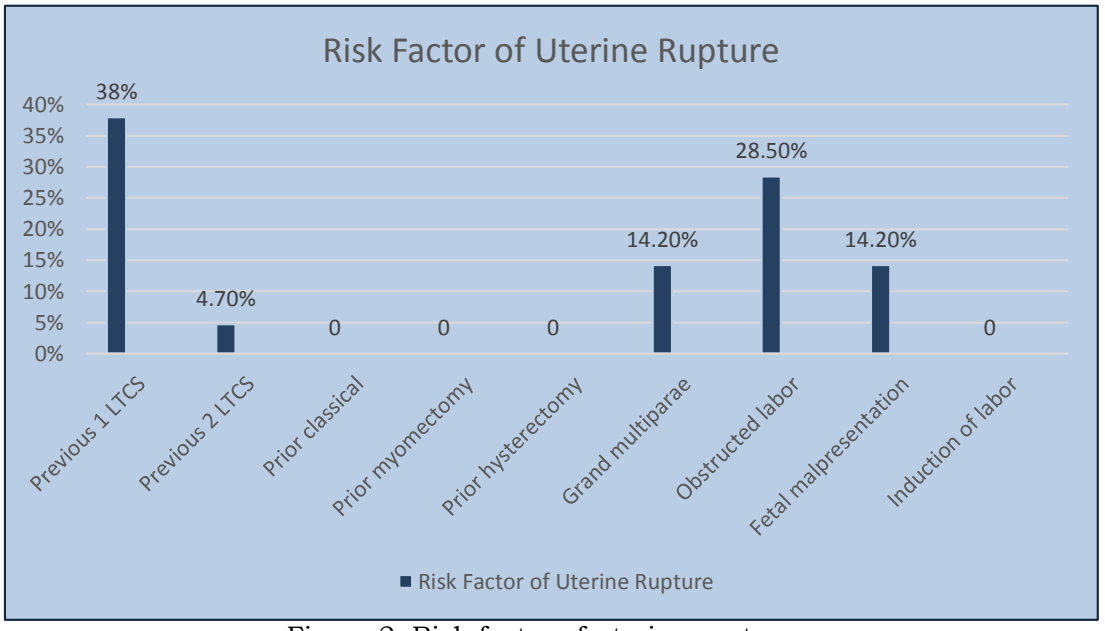

Figure 2. Risk factor of uterine rupture

Table 4
Intraoperative findings

	Response	Respondents	Percentage
Hemoperitoneum	16	21	76.1%
Fetus outside uterus	18	21	85.7%
Fetus inside uterus	1	21	0.04 %
Broad ligament hematoma	2	21	14.21%
Bladder rupture	3	21	9.5 %

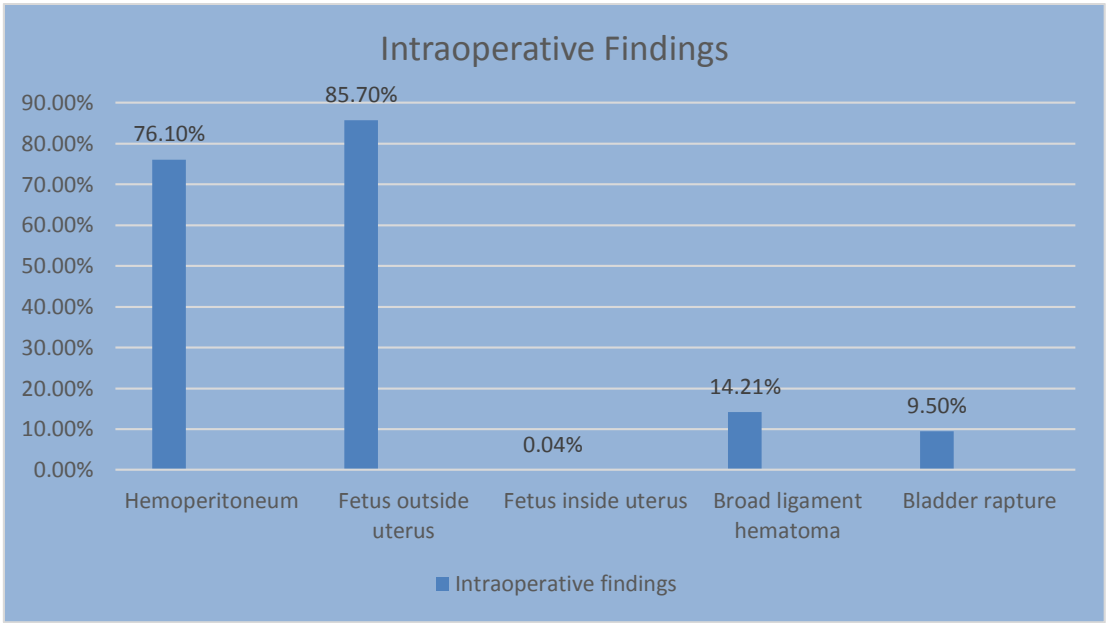

Figure 3. Intraoperative findings

Table 5
Surgery performed for uterine rupture

Repair CTL	9	21
Subtotal hysterectomy	1	21
Total hysterectomy	1	21
Uterine iliac ligation	3	21

Table 6
Post operative complications

	Response	Respondents	Percentage
Anemia	10	21	47.6 %
Urinary tract infection	5	21	23.8 %
Fever	7	21	33.3 %
Wound infection	2	21	9.5 %
Shock	4	21	19.0%
Acute renal failure	1	21	4.7%
Respiratory tract infection	1	21	4.7%

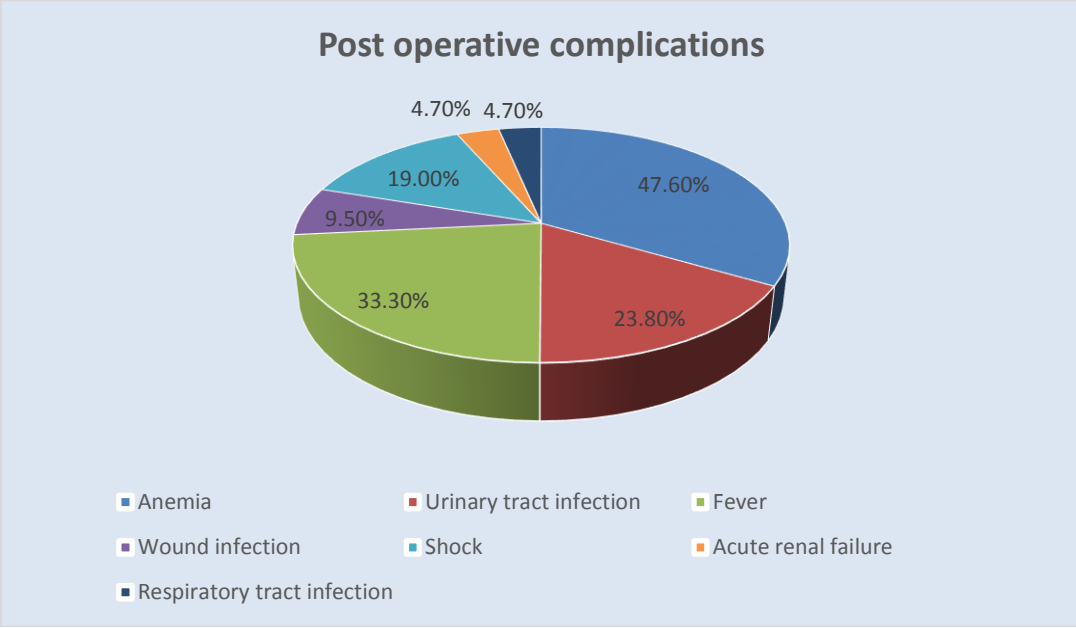

Figure 4. Post operative complications

Table 7
Fetal outcome

Respondents	Response	Respondents	Percentage
Alive	1	21	4.7
IUD	18	21	85.79
Still birth	2	21	9.5

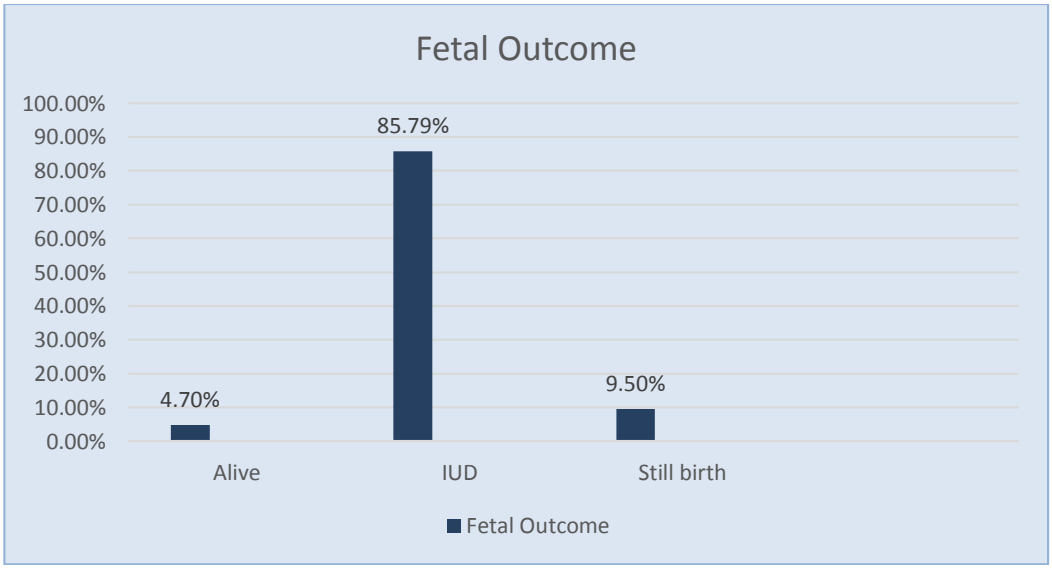

Figure 5. Fetal outcome

Discussion

It should be noted that most of the patients falls in the age group of 21-30 years and 30 to 40 years where most of the uterine rupture condition belongs to. It is at these age that the risk of the condition (which is a medical emergency) is at the most prevalence rate that is vital to understand as well. The main cases of the 1 previous lower segment cesarean section have been found to be most critically involved with the development of the uterine rupture and it is to be noted that the obstruction for labor has also been reported to be the second most critical risk factor for the development of the uterine rupture that is vital to understand as well. The fetal malpresentation is also one of the critical conditions that can be developing the medical complication of the uterine rupture in the gestation period that needs to be assessed as the main risks and the complications. Equally important is the grand multiparae condition that is equally a problematic risk factor as much as the fetal malpresentation which is very critical and important as well.

As for the intraoperative findings, the critical risk areas as for the hemoperitoneum has been secondly mostly related to the development of the uterine rupture (16/21). And the most critical finding of the fetus outside the uterus has been found to be strongly correlated or rather linked to the development of the fetal rupture that is important to understand and note too (18/21). Bladder rupture is another of the critical conditions that has been involved with the development of the clinical risk and complication that is uterine rupture and vital to be noted as well. The broad ligament hematoma has also been found to be equally problematic for the development of this medical emergency (2/21) and this has to be assessed properly as well.
The post operative complications are anemia, urinary tract, infection, fever, and shock which are the most important risk areas of the uterine rupture, and these has to be managed in most of the patients who has undergone the medical emergency. The anemia can be caused due to hemorrhage, and this is prominent in most of the cases, that is why, it needs the intensive care.

Uterine rupture can be treated with different types of procedures among the patients. Repairing CTL and Uterine iliac ligation are the most effective and prevalent processes in the uterine rupture. Therefore, the research helped in better procedures. Uterine ligation has been considered as the one of the most effective and common processes for uterine rupture in the population (13). On the other hand, hysterectomy has been divided into two parts such as subtotal and total way. Therefore, different complications associated with the uterine ruptures can be managed with the help of the hysterectomy. Heavy bleeding due to fibroids, endometriosis and adenomyosis can be treated with the help of hysterectomy among the women. Abnormal bleeding due to uterine ruptures would be repaired with the help of different types of hysterectomy.

Fetal rupture is one of the most critical issues in the post-operative condition. In that situation, 1 individual was alive. On the other hand, IUD was observed during the post operative condition. The research was conducted for analysis of different outcomes for the operation or surgical effects. The individuals were affected with different conditions. 2 individuals were observed as the stillbirth. It

was found out that 85.71% of participants were affected with IUD while 4.76% and 9.5% of participants gave birth of alive child and still birth child. Therefore, IUD has been considered as the most critical condition in the post-surgical situation. Rowlands, Oloto&Horwell (2016)(14) showed that in 1000 IUD insertion, 1 individual was affected with the uterine rupture. Therefore, the research result was conflicting with the research findings in the experiment. The research analyzed that the IUD is one of the most cost effective and simple processes or long-lasting active contraceptives. The researchers analyzed that IUD was responsible for low co-morbidity in the users. However, it is evident that if the participants are affected with uterine rupture, IUD restricts the morbidity rate.

Limitation of the study

The limitation of the study is that the different set of fetal outcomes has been focused more as compared to the maternal ones. The allied health practitioners have a great role to play in the peri, post as well as the preoperative care of uterine rupture that is critical to understand as well. But the focus as well as the main emphasis has only been given to the medical profession that is vital to note and the medical assessments plus methods of management only that is the main limitation of the study. The people from the different types of the socio-economic backgrounds are very much having the risks and the complications with the different types of health care accessibility and even food and nutrition can have a pre-determining effect on the fetal health and the uterine function which has also not been covered in this research study. Moreover, the social backgrounds and the lifestyle factors have a role to play in the uterine function as well as the fetal condition that is vital to note and this has not been encompassed in the study which is very important to note and understand too. This gives a certain amount of the focus on the quantitative research and the quantitative data which is exclusive to this research

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