

Assessment of Fetal Monitoring Devices in India: Challenges, Innovations, and Implications for Maternal and Neonatal Health.

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Did you know?

Globally, 223 mothers die in 100,000 live births.

In 1000 live births, 19 babies die during delivery or post-delivery

In India, in 1 lakh live births, 97 mothers die after pregnancy, delivery, or post-pregnancy.

In 1000 live births, 26 babies die during delivery or post-delivery.

80%

of complications can be avoided by closely monitoring the mother and baby in the last three months before delivery and during labor, along with making informed decisions.

About us



Janitri Innovations was established in 2016 to address the global concern of maternal and neonatal deaths during birth.

Our Vision is to see a world where no mother or baby dies during pregnancy, delivery, or post delivery.

Our Mission is to develop sustainable, affordable and easy to use vitals monitoring devices and software to monitor **1000 days** journey of pregnancy, labor and newborn.



Keyar DT Max

Wireless and Portable Fetal Monitor

A portable and smart CTG machine with most advanced features.

Key Features

- Remote monitoring automated.
- Alerts and alarms.
- Auto-interpreted CTG reports.
- Automated fetal movement marker.
- Continuous monitoring of MHR, FHR, and UC.
- Pocket-sized speaker to listen to the heartbeat.

Package Includes

Doppler | TOCO | SpO₂ device | Belts | Ultrasound Gel | 10.1' Touch Monitor | Charging cable | Speaker | Fetal movement marker | Twin probe | Trolley (Add-on)



Market Growth and Impact of COVID-19

- India's market for neonatal and prenatal devices is projected to grow at a CAGR of 5.9% in the upcoming years.

The COVID-19 pandemic disrupted maternal healthcare:

- Travel limits and scarce public transport.
- Fear of catching the virus prevented many women from accessing needed services.

A March 2022 study by PubMed Central noted:

- 2.26% drop in hospital births.
- 22.91% decrease in antenatal care services.

India Fetal and Neonatal Care Equipment Market

Market Size

CAGR 5.90%



Study Period	2019 - 2029
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Base Year For Estimation	2023
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Forecast Data Period	2024 - 2029
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Historical Data Period	2019 - 2022
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CAGR	5.90 %
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Market Concentration	Medium
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Major Players

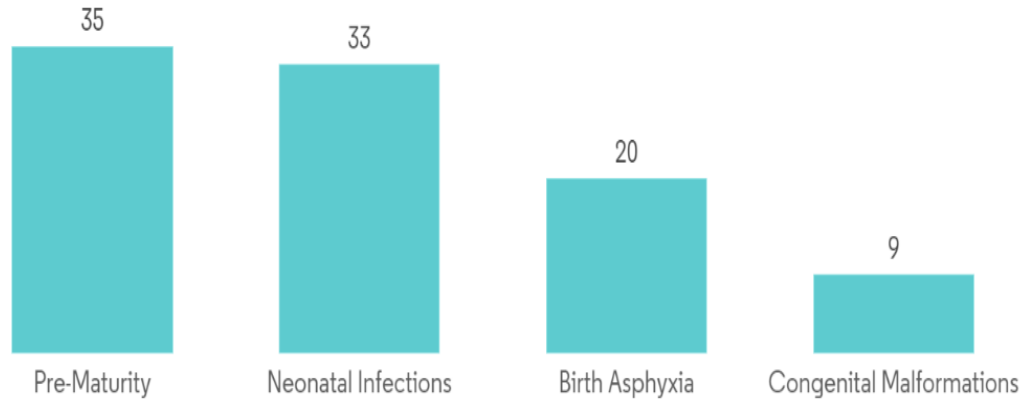
Dräger

ATOM MEDICAL



Incidence and Prevalence

Causes of New-Born Deaths (in %), India, 2022



As per the report, there are various causes of new-born deaths in India. These are:

- Pre-Maturity: 35%
- Neonatal Infections: 33%
- Birth Asphyxia: 20%
- Congenital Malformations: 9%

Estimated Number of Births in India (in million), India, 2022



As per the report, out of 25 million births in 2022, 1.7 million are pre-term births.

6.8% of births are pre-term births due to:

- Maternal health issues (e.g., preeclampsia, infections)
- Multiple pregnancies
- Lifestyle factors (e.g., smoking, alcohol, drugs)
- Stress
- Placental problems
- Inadequate prenatal care

Prenatal & Fetal Equipment

- **Fetal Dopplers:** Devices used to measure the fetal heart rate, allowing healthcare providers to monitor the baby's well-being during pregnancy.
- **Fetal Monitors:** Equipment that tracks the baby's heart rate and the mother's contractions during labor to ensure safe delivery.
- **Fetal Pulse Oximeters:** Devices that measure the oxygen levels in the fetus's blood, providing critical information about the baby's health.
- **Other Prenatal and Fetal Equipment:** Additional tools and devices used for comprehensive prenatal care and monitoring.

Neonatal Care Equipment

- **Incubators:** Controlled environments that provide warmth and protection for premature or ill newborns, essential for their development and recovery.
- **Neonatal Monitoring Devices:** Equipment used to continuously monitor newborns' vital signs like heart rate, respiratory rate, and blood pressure.
- **Phototherapy Equipment:** Devices used to treat jaundice in newborns by using light to break down excess bilirubin in the blood.
- **Respiratory Assistance and Monitoring Devices:** Equipment that supports and monitors breathing in newborns who have respiratory difficulties.
- **Other Neonatal Care Equipment:** Additional tools and devices that provide specialized care and treatment for newborns in neonatal intensive care units.

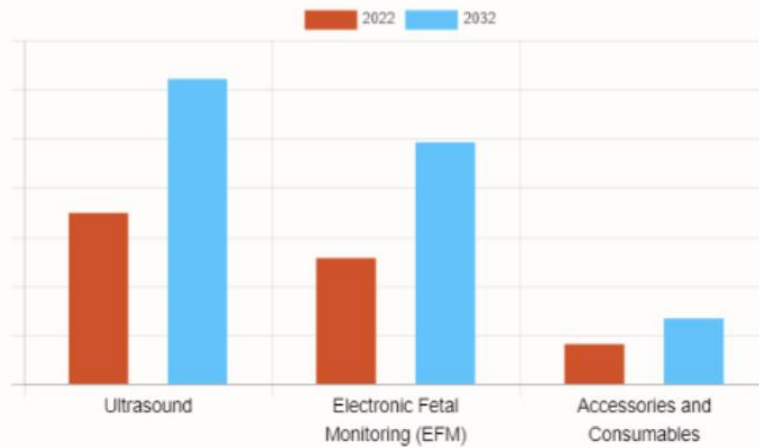
Segmentation of Fetal monitoring device:

By Product Type	Prenatal & Fetal Equipment	Fetal Dopplers Fetal Monitors Fetal Pulse Oximeters Other Prenatal and Fetal Equipment
	Neonatal Care Equipment	Incubators Neonatal Monitoring Devices Phototherapy Equipment Respiratory Assistance and Monitoring Devices Other Neonatal Care Equipment

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FETAL MONITORING MARKET

BY PRODUCT

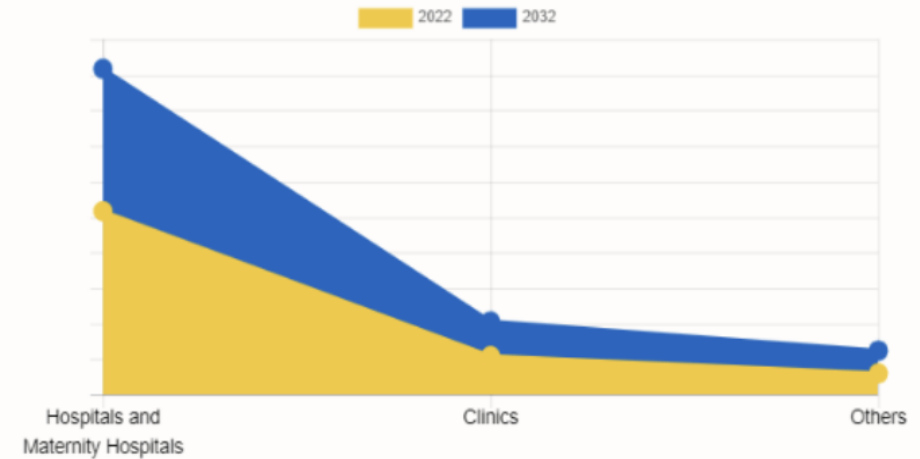


The ultrasound segment accounted for the largest share in 2022 and electronic fetal monitoring (EFM) segment is expected to register the highest CAGR during the forecast period.

Segmentation by product

FETAL MONITORING MARKET

BY END USER



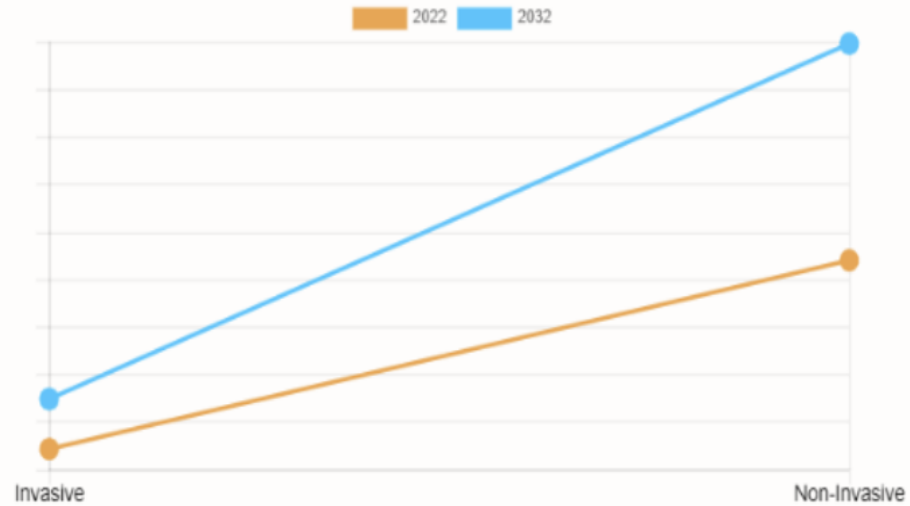
The hospitals and maternity hospitals segment occupied the largest share in 2022 and others segment is expected to register the highest CAGR during forecast period.

Segmentation by an end-user

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FETAL MONITORING MARKET

BY METHOD

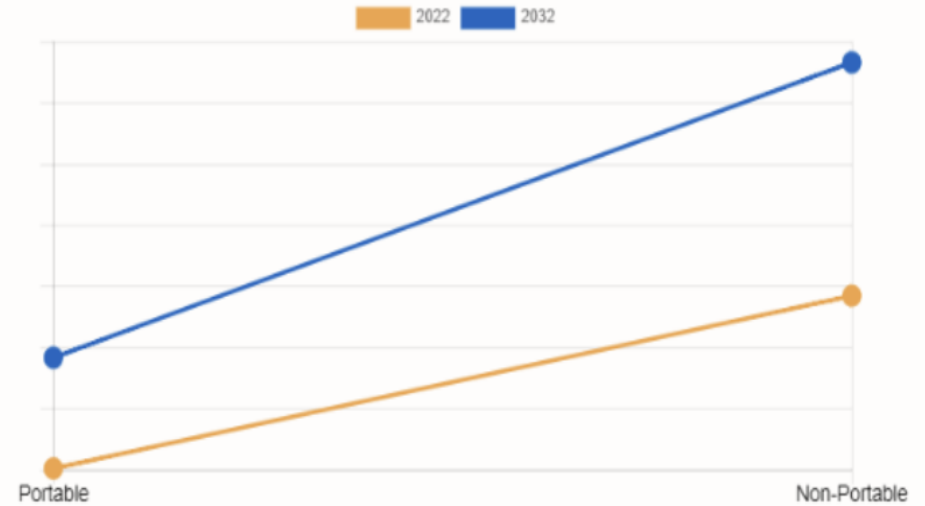


The non-invasive segment accounted for the largest share in 2022 and is also expected to register the highest CAGR during the forecast period.

Segmentation by method

FETAL MONITORING MARKET

BY PORTABILITY



The non-portable segment accounted for the largest share in 2022 and portable segment is expected to register the highest CAGR during the forecast period.

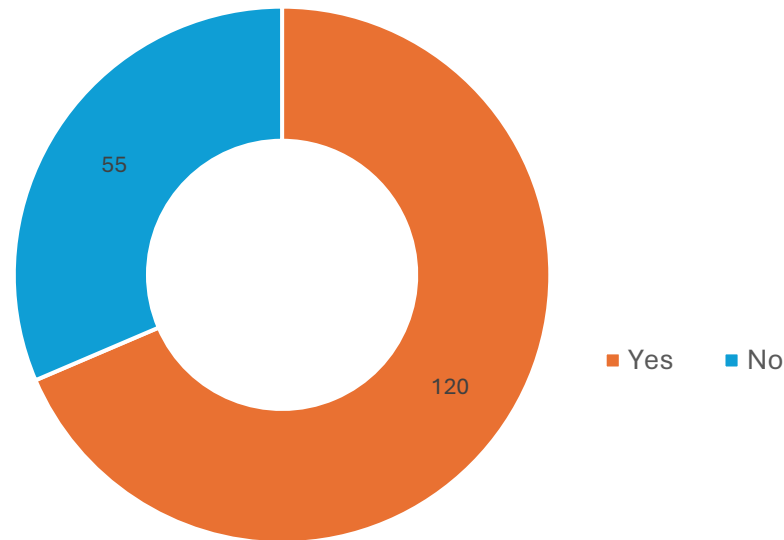
Segmentation by portability

Research Objective:		
Objective	Method	Result
Assess the use of electronic fetal monitoring devices in current medical practice.	Primary research	The majority of gynecologists surveyed use fetal monitoring devices, while a smaller group does not, possibly due to adherence to traditional practices and methods.
Determine the frequency of use of fetal monitoring devices during routine check-ups	Primary research	Most gynecologists expressed positive satisfaction with fetal monitoring devices, frequently rating them highly.
Evaluate the frequency of using fetal monitoring devices during high-risk pregnancies.	Primary research	Fetal monitoring devices are more commonly used in high-risk pregnancies compared to routine checkups, according to survey findings.
Investigate the prevalence of technical issues encountered with fetal monitoring devices.	Primary research	Many gynecologists reported facing technical challenges with fetal monitoring devices, highlighting a significant barrier to their broader adoption.
Assess the use of fetal monitoring devices to enhance the neonatal health outcomes	Primary research	Most gynecologists believe that fetal monitoring devices improve neonatal health outcomes, underscoring their perceived importance for newborn health.
To assess the healthcare system's support for the adoption of new fetal monitoring technologies	Primary research	Most doctors believe the healthcare system supports the adoption of new fetal monitoring technologies, suggesting a favorable environment for integrating these devices into clinical practice.

Results & Discussions:

I have done primary research with 175 respondents (gynecologists) and asked them some questions that helped me in my dissertation.

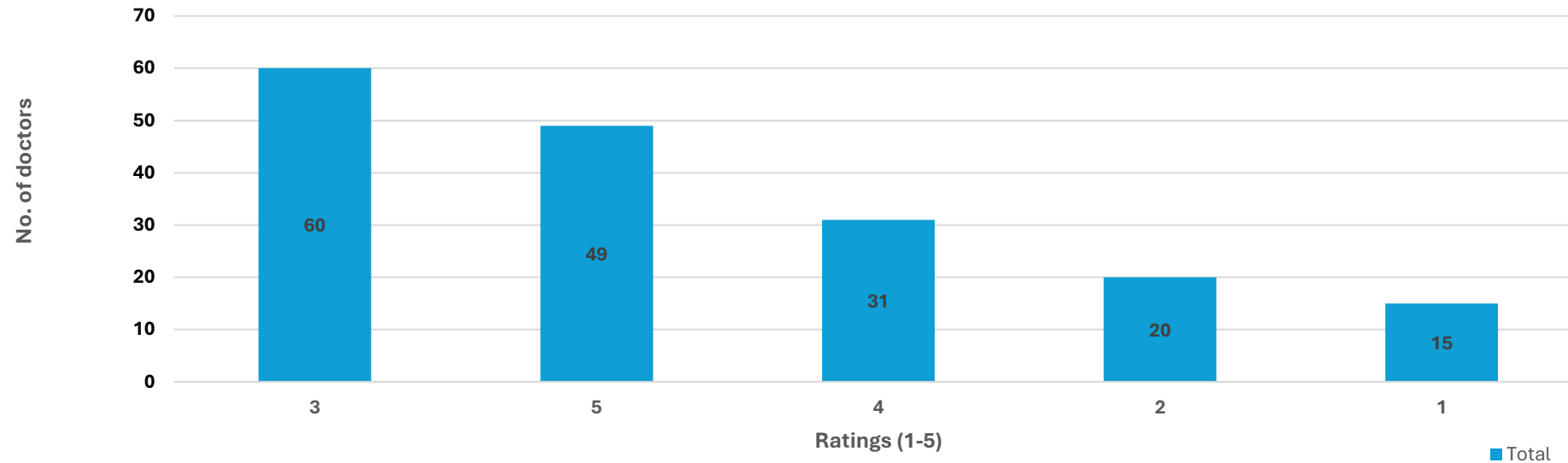
Q.Do you use electronic fetal monitoring devices in your practice?



As per the survey, out of 175 doctors, 120 are using fetal monitoring devices and 55 are not. Traditional methods or practices might be the reasons for not using them

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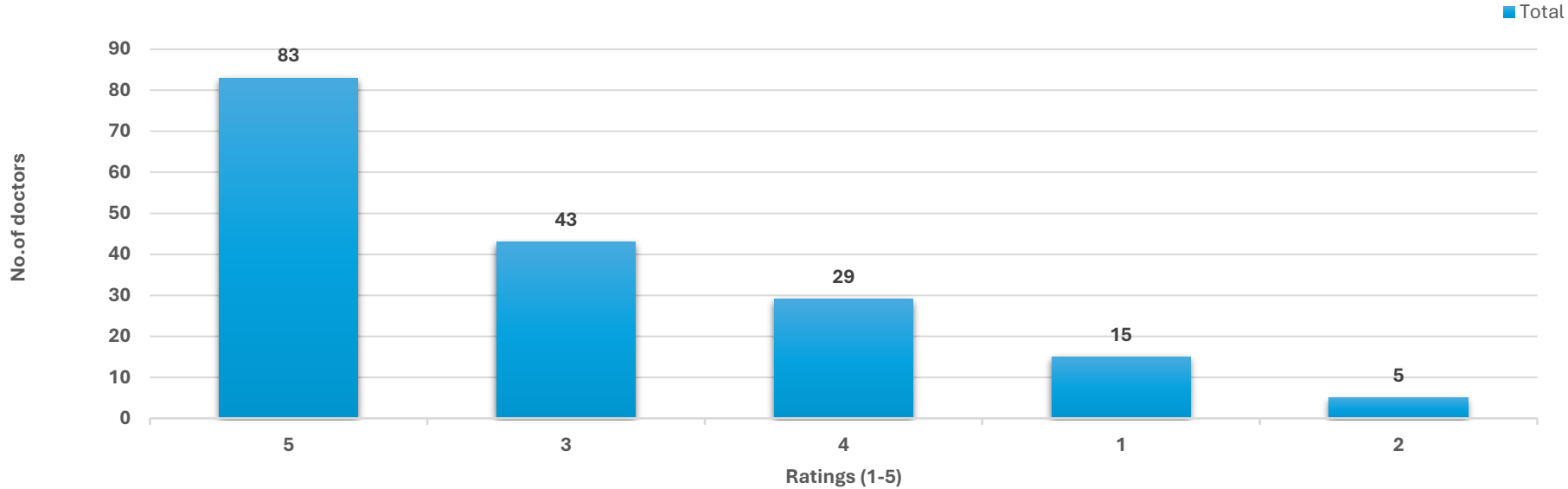
Q.How frequently do you use fetal monitoring devices during routine check-ups? (Rate 1-5, where 1 is 'Very less' and 5 is 'Always')



Per the survey, out of 175 gynecologists, 60 have rated the 3, 49 have rated the 5, 31 have rated the 4, 20 have rated the 2, and 15 have rated the 1. Most doctors frequently use Fetal monitoring devices.

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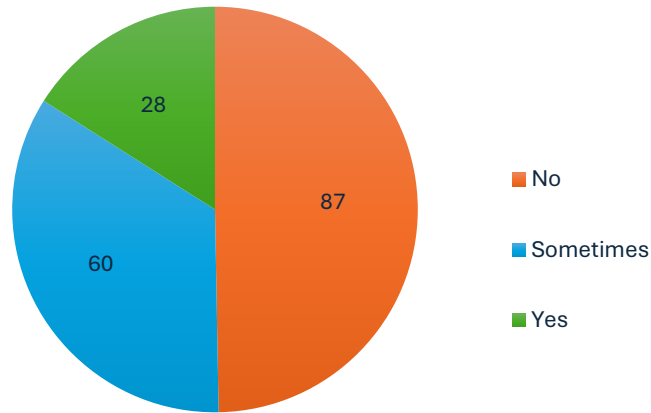
Q.How frequently do you use fetal monitoring devices during high-risk pregnancies? (Rate 1-5, where 1 is 'Very less' and 5 is 'Always')



Per the survey, out of 175 gynecologists, 83 have rated the 5, 43 have rated the 3, 29 have rated the 4, 15 have rated the 2, and 5 have rated the 1. Most doctors frequently use fetal monitoring devices in high-risk pregnancies as compared to general routine checkups.

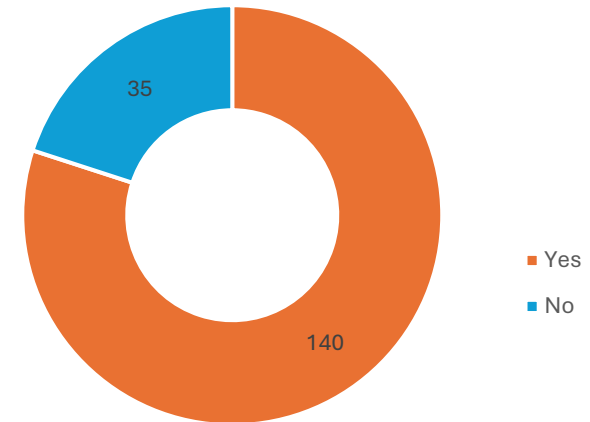
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Q. Do you face technical issues with fetal monitoring devices? (Yes/No)



As per the graph, it is showing that many doctors are facing technical challenges while using fetal monitoring devices. Out of 175 gynecologists, 60 doctors say they face technical challenges while using the fetal monitoring devices.

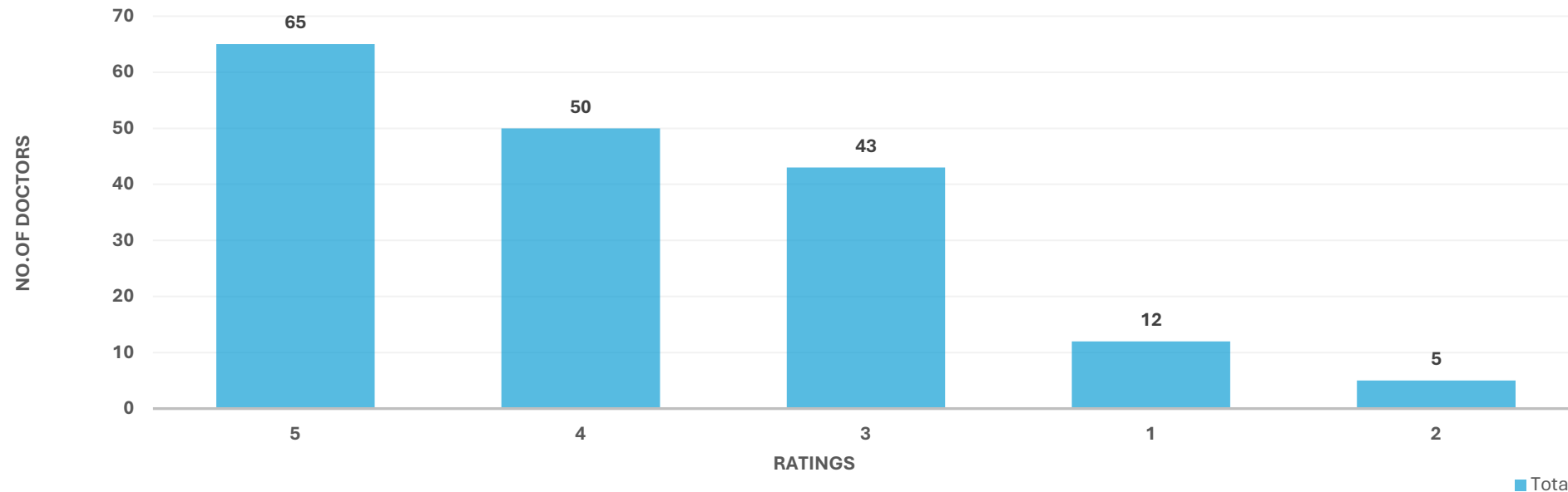
Q. Do you believe fetal monitoring devices improve neonatal health outcomes? (Yes/No)



Out of 175 gynaecologists, 140 doctors believe that fetal monitoring devices improve neonatal health outcomes.

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Q.How would you rate the support from the healthcare system for adopting new fetal monitoring technologies? (Rate 1-5, where 1 is 'Very Poor' and 5 is 'Excellent')



As per the survey, more than 150 doctors out of 175 believed that the healthcare system provides support for adopting new fetal monitoring technologies.

Conclusion:

- **Adoption Rates:** Out of 175 gynecologists surveyed, 120 are using fetal monitoring devices while 55 are not. The reasons for not using these devices may be linked to traditional practices and methods.
- **Satisfaction Ratings:** When asked to rate their satisfaction with fetal monitoring devices, 60 gynecologists rated them a 3, 49 rated them a 5, 31 rated them a 4, 20 rated them a 2, and 15 rated them a 1. This indicates that most doctors find these devices satisfactory, with many frequently using them.
- **Usage in High-Risk Pregnancies:** The survey revealed that 83 gynecologists rated their use of fetal monitoring devices in high-risk pregnancies a 5, 43 rated it a 3, 29 rated it a 4, 15 rated it a 2, and 5 rated it a 1. This shows that these devices are more frequently used in high-risk pregnancies than routine checkups.
- **Technical Challenges:** Out of 175 gynecologists, 60 reported facing technical challenges while using fetal monitoring devices, indicating that technical difficulties are a significant barrier to their broader adoption.
- **Perceived Health Benefits:** A strong majority, 140 out of 175 gynecologists, believe that fetal monitoring devices improve neonatal health outcomes, underscoring their perceived importance in ensuring better health for newborns.
- **Support for Adoption:** More than 150 out of 175 doctors believe that the healthcare system supports the adoption of new fetal monitoring technologies, suggesting a favorable environment for integrating these devices into clinical practice.

Thank You

