

The human heart, an enduring mechanism that supports life, consistently coordinates mild auditory perceptions. A heart sound machine, a technical advancement in cardiology that aims to overcome the drawbacks of the conventional stethoscope, is the goal of the research. For over 200 years, doctors have predominantly employed the stethoscope, an elementary acoustic instrument, to perceive and analyze these cardiac sounds (Ogawa et al., 2023). These devices use intricate algorithms, digital filters, and high-tech microphones to record, analyze, and display cardiac sounds—far superior to the traditional stethoscope. With an anticipated 17.9 million fatalities in 2019, cardiovascular diseases exceeded all other causes of death worldwide (Ohashi et al., 2023). Improving patient outcomes and reducing death rates requires early and precise detection of cardiac problems. The use of recordings helps in the reduction of interpretational differences and the improvement of diagnostic accuracy by giving objective data. When the mitral and tricuspid valves close at the start of systole (ventricular contraction), the low-pitched sound of S1 (Lub) is heard. To identify the characteristic features of the ailment that is impacting the patient with increased accuracy and clarity. Modern signal processing techniques and high-sensitivity microphones can pick up sounds that auscultation could miss, such as odd or faint noises. Due to digital filters, which effectively remove background noise, a more accurate and precise evaluation of sound is achievable. At the end of the systole, the aortic and pulmonary valves close, producing a higher-pitched sound known as S2 (Dub). Occasionally, any irregular heart sounds, like murmurs, clicks, or gallops, could be a sign of a severe medical issue that needs to be addressed. This technology can transform cardiac diagnostics by offering objective data, increased sensitivity, and efficiency. Heart sound machines' efficiency, objectivity, and greater specificity could completely transform cardiac diagnosis. The stethoscope has several issues, including its slowness, lack of sensitivity, vulnerability to background noise, and inherent subjectivity. Every heartbeat produces four distinct noises: S1, S2, S3, and S4 (Malik et al., 2019). Early detection is crucial in reducing the worldwide impact of cardiovascular illnesses. This equipment would provide easily accessible data, allowing for the faster and more accurate detection of cardiovascular problems. Although persistently compelling, the stethoscope has many drawbacks that could delay or prevent a correct diagnosis and necessary treatment. Clinicians may have different interpretations of cardiac sounds due to the qualitative nature of auscultation. Ambient sounds, such as the patient's respiration or movement, could distort an auscultator's ability to hear well. There is a precise occurrence in the heart's pumping mechanism that each sound reflects. In the UK, they account for almost 25% of all fatalities (Nielsen et al., 2021).