**Research questions:**

1. What is the overall accuracy rate for emotion recognition from conversational speech, and how does it vary across different studies and populations?
2. What are the most used methods and techniques for emotion recognition from conversational speech, and how effective are they compared to each other?
3. What are the most reliable and valid measures of emotion recognition from conversational speech, and how do they compare to each other?
4. How do different factors (such as speaker gender, culture, language, or emotional state) affect the accuracy of emotion recognition from conversational speech?
5. Are there any consistent patterns or trends in the results of studies on emotion recognition from conversational speech, and what factors may explain any inconsistencies or conflicting results?
6. What are the most promising areas for future research on emotion recognition from conversational speech, based on the findings of existing studies?

**Keywords:**

**Emotion recognition in conversation & speech & physiological signals & video & deep learning &machine learning**

**Datasets:**

1. **IEEE**
2. **Elsevier**
3. **Springer**
4. **Ebsco**
5. **Web of science**
6. **Others**

**Inclusion and exclusion criteria:**

**Inclusion:**

1. **Conversation dataset in any language (Poria et al. 2019)**
2. **Modalities: speech, video, physiological signals (IoT), wearables**
3. **Deep learning and machine learning**
4. **Natural, or acted conversation**
5. **Conversation between humans only**
6. **Years from 2010-2023**
7. **Categorical or dimensional models**

**Exclusion:**

1. **Conversation with an avatar (i.e. Semaine)**
2. **Studies that do not use any deep learning or machine learning**
3. **Older than 2010**
4. **Stress and anxiety studies**
5. **Textual conversation**
6. **Preprints, no peer-reviewed articles (e.g. arXiv)**

**Evaluation parameters (measures-scores):**

**Accuracy, AUROC, F-score, sensitivity, specificity, CCC, precision or recall.**

**Outline:**

1. Introduction: Brief overview of the importance of emotion recognition from conversational speech, its applications, and the challenges associated with it.
2. Methodology: Explanation of the search strategy and inclusion/exclusion criteria used to identify relevant studies for the meta-analysis.
3. Study Characteristics: Description of the key characteristics of the selected studies, such as the type of data used (e.g., audio, transcripts), sample size, participant demographics, and emotion labels used.
4. Techniques for Emotion Recognition: Overview of the techniques used for emotion recognition in conversational speech, such as acoustic features, linguistic features, and machine learning algorithms.
5. Performance Evaluation: Discussion of the evaluation measures used to assess the performance of emotion recognition systems, including accuracy, precision, recall, and F1 score.
6. Results: Summary of the findings of the meta-analysis, including the most frequently used techniques and their performance in recognizing different emotions from conversational speech.
7. Discussion: Interpretation of the results in the context of the challenges and limitations of emotion recognition from conversational speech and suggestions for future research.
8. Conclusion: Summary of the main contributions and implications of the meta-analysis for the field of emotion recognition from conversational speech

**Subgroup Analysis:**

1. Language: subgrouping studies based on the language of the conversation (e.g., English, Mandarin, Arabic, etc.).
2. Culture: subgrouping studies based on the cultural context of the conversation (e.g., Western, Eastern, African, etc.).
3. Modality: subgrouping studies based on the modality of the input data (e.g., audio, video, or audiovisual).
4. Methodology: subgrouping studies based on the methodology used for emotion recognition (e.g., machine learning, deep learning, rule-based systems, etc.).
5. Dataset: subgrouping studies based on the dataset used for training and evaluation (e.g., AffectNet, IEMOCAP, MSP-IMPROV, etc.).
6. Emotion categories: subgrouping studies based on the categories of emotions recognized (e.g., basic emotions, complex emotions, or sentiment analysis).