Determination of reliability and practicality of saliva as a genetic source by analyzing DNA yield in forensic investigation : A systematic review”

BACKGROUND

Genetic analysis has become the mainstay of forensic identification protocols

The main source of DNA from saliva is the desquamated epithelial cell component of the oral mucosa

The objective of this review is to assess saliva as a DNA source in forensic and other settings

LITERATURE SEARCH

SCREENING

Screening process adapted from PRISMA flowchart (2009)

Identification - 4940

Screening - 182

Eligibility - 122

Included - 8

INCLUSION CRITERIA	EXCLUSION CRITERIA
Clinical trials registered in Cochrane Library and Clinical Trial Registry of India	Trials deemed to be unsuitable for our analysis due to lack of adequate information and major deficits in study design, methods
Studies that specifically mention the genetic analysis of saliva in forensic settings	Trials that mention saliva in non-genetic analysis including proteomics, drug testing etc
Studies that mention the genetic analysis of saliva in settings other than forensics like academic research, quality analysis, genotyping	Trials that have included saliva in genetic analysis but have not adequately presented relevant data required in data collection
English language articles (including translations)	Other language articles
Studies in humans	Studies in animals

WORK FLOW

DATA COLLECTION
Initial assessment and development of data items

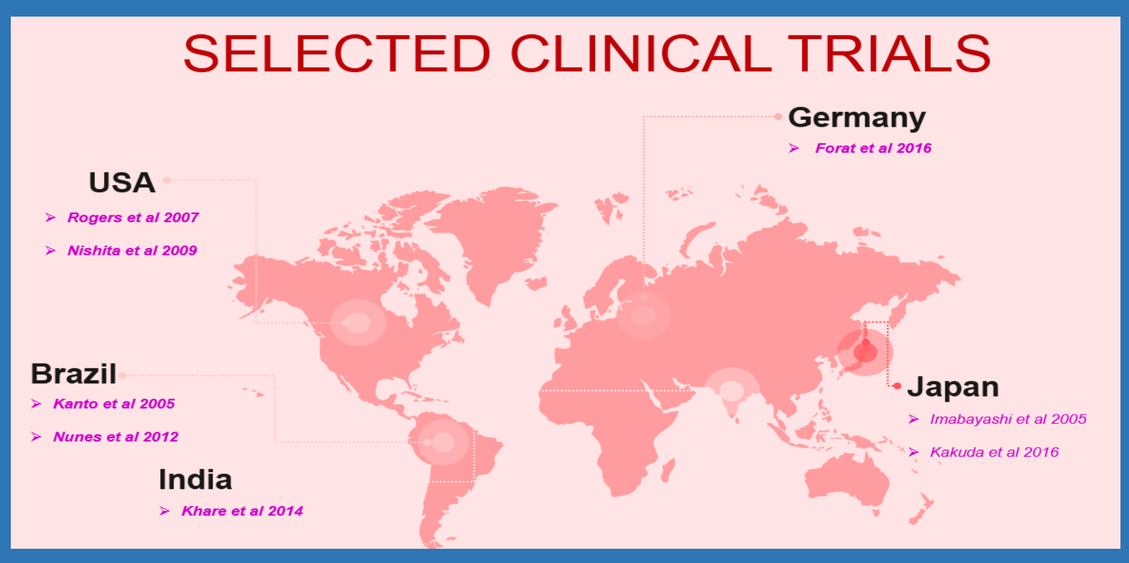
DATA ANALYSIS
Two independent observers
Consensus or third party mediation

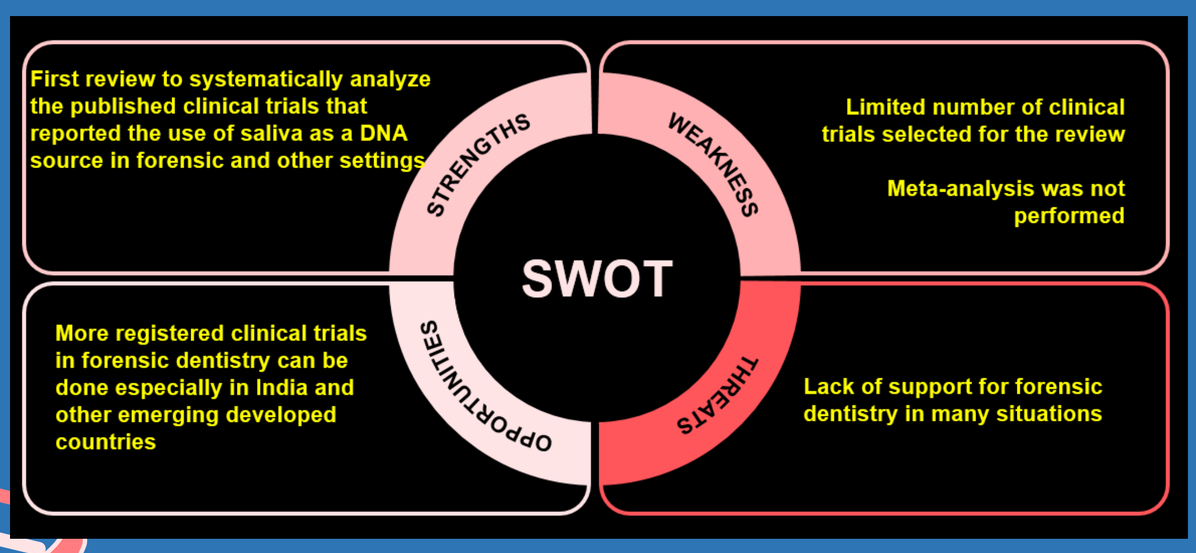
BIAS ANALYSIS
Applying Cochrane Risk of Bias Tool
Bias in individual studies and across studies

QUALITATIVE SYNTHESIS
Development of Themes/Variables for analysis
Comprehensive evaluation

FINAL ASSESSMENT
Summary and conclusions

RESULTS





Saliva is one of the most common and effective sources of DNA.

However, guidelines for the use of saliva in DNA analysis are lacking.

This reflected in the wide variation in the collection, storage and analysis protocols

Sample size, age group, gender, ethnicity were extremely varied

Saliva sampling is best done by ***whole saliva in a stabilization medium***.

Results of the trials indicate that temperature and time duration do not affect the DNA success

Saliva is an acceptable and reliable source of DNA, when standard guidelines of collection, stabilization, storage and analysis were followed