

Female adolescent voice change: Protocol for a scoping review

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Background

The female adolescent voice has historically received minimal attention from voice researchers (Siple, 1995; Sweet, 2016). Quantifiable changes in female voice physiology and its acoustic parameters (Gackle, 1991; Kahane, 1978, 1982) confirm not only the validity of female adolescent voice change (FAVC) research, but its importance in informing clinical practice and voice research as well as singing-voice pedagogy. Science-based research into FAVC is crucial in the development and refinement of effective pedagogies and assessment practices that promote vocal health and equitable learning opportunities for this population, and a clear delineation of this research is needed.

The proposed scoping review will mine for existing literature that provides original data on FAVC. The primary research question asks, ‘What is the scope of literature available offering objective data on the physical, acoustic, aerodynamic, and perceptual characteristics of the changing female voice in adolescence?’ Only once such data is clearly outlined can inferences, connections, and practical application of such be applied to voice pedagogy and research in an informed and useful manner.

2 – Methods

2.1 – Scoping framework

The scoping review will adhere to the PRISMA-ScR checklist guidelines (Tricco et al., 2018, p. 471). Search strategies have been developed in consultation with a professional librarian at the University of Auckland General Library.

2.2 – Eligibility criteria

Only English language primary-source studies including new data from 1900 to 2021 will be included. Quantitative data considering human female adolescent voice change, laryngeal development, and directly related endocrinological changes will be included. Objective perceptual data on FAVC experiences will also be included.

Only data sources that offer new contributions to knowledge on the female adolescent voice or FAVC-related phenomena will be included. Reiterations of primary source data will not be included if they do not contribute new information or application of existing data – for example, some book chapters or articles that synthesise external primary source data such as literature reviews or summaries.

2.3 – Information sources

Literature from scholarly and professional journals, conference papers, and books will be included. Potentially relevant sources will be identified using Scopus, Medline, Science Direct, and ProQuest databases.

2.4 – Search

A professional librarian from the University of Auckland General Library was consulted to assist with the development of a search strategy. The following search terms will be used for the Scopus database:

- 1) female AND (development OR mutation OR growth OR puberty) AND (larynx)
- 2) (adolescent OR teen OR teenage OR paediatric OR paediatric) AND (female OR girl OR girls) AND (singing OR larynx) AND (change OR development OR mutation)
- 3) female AND (development OR mutation OR growth OR puberty) AND (larynx) AND (singing)
- 4) female AND singing AND (larynx OR voice) AND (development OR mutation OR mutational OR growth)

2.5 – Selection of sources of evidence

Source titles will be manually screened to determine whether they meet eligibility criteria. If the title does not provide enough information for the inclusion or exclusion of the source, the researcher will examine the keywords, abstract, and full text, respectively, when required. Sources that meet the eligibility criteria will be imported directly into an EndNote (v. 20.2, 2021) database for further screening.

2.6 – Data charting

Data from eligible sources will be charted independently into a database using NVIVO (QSR-International, 2019) on a MacBook Pro (2019). The database will be updated as sources are selected, and a copy will be stored digitally on a secure cloud service.

2.7 – Data items

Data sources will be abstracted by year, aims, methods, results, and implications. Nodes will be developed and used throughout the charting process to categorise each source. Nodes (and sub-nodes) will be formally established based on thematic analysis of data but may include: FAVC changes (agility; breaks; breath; breathiness; dynamic range; intonation; quality; range; stability; stamina; vibrato); FAVC awareness; and menstruation related changes (positive; negative).

2.8 – Synthesis of results

Data will be synthesised into a narrative review, organised by themes derived through a coding query using NVIVO (v12). Further thematic analysis will be used to determine trends in data and will guide the organisation and discussion of the literature.

3 – Conclusion

The proposed scoping review, conducted according to the protocol described in this work, will aid in the collation and delineation of objective data on the FAVC reported in relevant literature across medicine, voice-science, education, and psychology fields. The resulting synthesis of available data into a cohesive narrative will highlight gaps in the knowledge base and suggest avenues of research that are yet to be pursued.

3.1 – Funding and conflict of interests

No funding for this research has been given, and the author declares no conflict of interests.

4.0 – References

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