PAROLA. Parenting APP for promoting language acquisition
(Progetto PRIN 2022, 2022P7WP37)

Theoretical background and aims

Language development is characterized by wide interindividual variability between the second and the third year of life (Fenson et al., 2007; Sansavini et al., 2021). However, some children show late language emergence, with a vocabulary size lower than 50 words at 24 months and/or absence of word combination at 30 months (Zubrick et al., 2007). These children are identified as late talkers with a prevalence between 9% and 21% (D'Amico et al., 2021; Sansavini et al., 2021). Persistent language difficulties have been observed in 6% to 44% of late talkers, with cascading effects at preschool and school age, documented by academic difficulties and social and behavioural problems (Brizzolara et al., 2011). The prevalence of language delay might have increased in the last years due to the atypical constraints associated with the COVID-19 pandemic and rising economic and educational poverty. Parents can mitigate the risk of language delay and proactively facilitate an optimal communication environment for their children, especially in times of stress and uncertainty (Viola et al., 2022). Recent studies have proposed that APPs can support parents in promoting language development and are useful in reaching a large and linguistically heterogeneous sample (Mieszkowska et al., 2022). However, APPs are developed without paying attention to the voices of adults involved in promoting a child's language acquisition, such as parents, educators, teachers and paediatricians.

The current project aims to develop materials for the PAROLA APP for parents of monolingual, bilingual, and multilingual children within the critical period between 24 and 36 months. Content will be created through an innovative participatory approach that combines the literature analysis and adults' points of view (parents, paediatricians, educators/teachers). For the present project, the voices of paediatricians in three different regions (Emilia-Romagna, Veneto, and Abruzzo) will be collected.

Methods

Participants

To collect paediatricians' points of view, two focus groups with paediatricians (*n*= 20) for each University (Bologna, Aquila and Padova) will be organised with a total of 60 paediatricians involved. Concerning quantitative data, we will collect quantitative data by sending a short online survey to 100 paediatricians in each region (Emilia-Romagna, Abruzzo e Veneto) with an estimated final sample of 300 paediatricians.

Tools

Self-reported questionnaires. Questionnaires will be implemented to investigate the following topics: knowledge and perception of language delay; beliefs on activities to promote language development; suggestions for parents of activities to improve their child's language development; relationships with parents, teachers and health professionals to detect early markers of language impairment.

Focus groups. The paediatricians' voices will be collected using semi-structured focus groups (examples of questions, *"Could you describe possible indexes of language delays?"; "In your opinion, who are the people involved in detecting language delay?"*).

Procedure

The questionnaires will be completed online using the Qualtrics platform (about 15-20 minutes). A psychologist will conduct focus groups (8-10 paediatricians for each focus group; about 2 hours). All focus groups will be audio-recorded.

Statistical analyses

Quantitative data will be carried out using the SPSS statistical package. First, the internal consistency of questionnaires will be tested to obtain a measure of reliability (Cronbach's alpha). Secondly, ANOVAs will be conducted to investigate possible differences among regions (Emilia-Romagna, Abruzzo and Veneto). Moreover, moderation and mediation models will be run to understand the

relationship between the variables collected. Qualitative data will be analyzed by Nvivo software using content analysis to explore the main themes.

Ethical approval

The study protocol will meet the ethical guidelines for protecting human participants and receive formal approval from the University of Bologna Bioethics Committee. Informed consent will be required from participants.

Expected results

This study will allow a deep understanding of knowledge and perception of language delay among paediatricians, combining quantitative and qualitative data. Differences among regions could emerge.

Implications

A more profound understanding of knowledge and perception of language delay among paediatricians is a solid base for projecting effective materials for developing the APP PAROLA and for promoting dissemination activities. Increasing knowledge of paediatricians of early markers of language delays as well as of activities to promote language development could enhance parental communication modalities and support children in their psychological development in a crucial stage within the sensible first 1000 days of life, reducing long-term negative cascading effects.

References

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Plan of activities

Project and training activities. The post-doc fellow will: a) analyze literature; b) create questionnaires; c) collect data in the three different Regions (self-reported questionnaires, focus groups); d) create and manage databases; e) analyze qualitative (Nvivo) and quantitative (SPSS) data; f) disseminate results (presentations at departmental, national and international conferences; drafting of one article for an international indexed Journal).

Timing of activities. Request to the University of Bologna Bioethics Committee; ideation and creation of self-reported questionnaire; contacting paediatricians (1-3 months); data collection (self-reported questionnaires and focus groups: 3-7 months); data coding and analysis (5-9 months); dissemination (10-12 months).

Feasibility of the project. The project is feasible thanks to the consolidated collaboration between the SERES Psychological Service (Department of Psychology "Renzo Canestrari"), the Sant'Orsola Hospital, University di Bologna, and several paediatricians in the Emilia-Romagna Region.