

Conference Abstract

DAY 2 16th September 2023 (Saturday) POSTER 11.00 am-12.00 pm Scientific Session 8**Assessment and Analysis of Human Laterality for Manipulation and communication gestures using Renne's Laterality Questionnaire.****Leya H M, Vasudha Kulkarni**

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Background: Brain lateralisation has been subject of substantial research for many years. Most vertebrates exhibit lateral biases in their behaviour. Toads, chicken, and fish tend to react faster to predators approaching from the left. On the contrary most animals have right-sided biases while handling objects. In humans, right-handers are far more common than left-handers. The laterality has significant implications for communication and is often linked to certain regions of the brain that may be influenced by handedness. There is a need for understanding the relationship between language, gesture and handedness to understand the evolutionary trend of lateralisation of human brain.

Aim: The present study aims at estimating the prevalence of laterality in communication and non-communication activities of human brain.

Methods: The cross-sectional was done on 375 participants aged 16 – 61 years. Renne's Laterality Questionnaire, was administered to all participants with their informed consent through Google forms, to collect data on laterality preferences in various types of gestures involving hands, face and ears. The questionnaire included 60 items related to both communication and non-communication functions, divided into 9 different categories. The direction and strength of laterality were assessed by Laterality Index, and laterality bias was analysed at the population level. The participants were classified as strong left-lateralised, mixed left-lateralised, ambidextrous, mixed right-lateralised and strong right-lateralised based on Laterality index scores.

Results: The highest percentage for both communication and non-communication were in mixed right-lateralised participants (61.86%) followed by strong right-lateralised participants (27.20%). 7.73% of them were ambidextrous and 2.93% were mixed left-lateralised. Out of the total population, only 1 participant (0.26%) was strongly left-lateralised.

Conclusion: Our findings revealed that the most common laterality is mixed right handedness followed by strong right handedness. This enhances our understanding that human laterality is influenced by behavioural characteristics, interactional context and socio-demographic characteristics.

Key words: Laterality Index, Rennes Questionnaire, Handedness, Gestural communication.