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The NeuroMotion app s usability and inter-rater reliability: a tool for general movement assessments

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Perspective

Introduction

Infants with cerebral palsy must be identi ed early following prenatal brain injuries in order to get early treatments (CP). General Movements Assessments have a strong predictive value for CP during the dgety movement stage.

To test the inter-rater reliability of GMA in a newborn risk group and to investigate the usefulness of the NeuroMotionTM app in terms of video quality and user experience [1]. In a cohort of 37 newborns recruited in a multicentre trial of GMA as part of the Swedish neonatal follow-up programme for high-risk infants, GMA, inter-rater reliability, and lm quality were evaluated. Some of these babies were videotaped twice. A web-based questionnaire was sent to 95 parents of 52 newborns to assess their user experience. ree on-site assessors each did GMA a er a GMA specialist appraised the lm quality and performed GMA. Krippendor 's alpha was used to calculate inter-rater reliability.

Description

Children at high risk of cerebral palsy require early intervention, which necessitates identifying these children earlier than is presently the case [2-5]. Despite advancements owing to early screening, the majority of children with CP are still identi ed a er one year One of the most essential instruments for early identi cation of CP is Prechtl's General Movement Assessment GMA is a qualitative examination of an infant's spontaneous movements from birth to the age of 20 weeks corrected.

Film quality assessment

A GMA expert evaluated the videos' quality using a standardised form that included questions on sharpness, camera position, clothes, surrounding in uences, and the infants' posture and mood, all in accordance with GMA recording criteria.

User experience of NeuroMotion

1–7 months following the recording, a web link to the user experience questionnaire was emailed to one or both parents, depending on accessible email addresses. Reminder emails were sent twice. e web-based questions were completely anonymous and unrelated to any particular lm or infant. e questionnaire was aided with the Linköpings University-licensed programme "Survey&Report", which allows for customised responses on cellphones and desktops.

Inter-rater reliability

Both between on-site assessors and between on-site assessors and the GMA expert, inter-rater reliability was assessed. In addition, the on-site consensus of the assessors was compared to the GMA expert's evaluation. is investigation yielded six di erent inter-rater reliability estimations.

Film quality

ere were 45 lms available for lm quality evaluation, and the majority of them had outstanding visual quality. Because the "camera was not kept in a steady posture," one lm was deemed "not authorised." Almost majority of the lms have outstanding infant settings. All newborns were appropriately put in a supine posture prior to shooting.

Conclusion

anks to good technical quality of the videos and straightforward instructions based on established GMA recommendations, the NeuroMotionTM app is a great tool for recording newborns both at home and in a clinical environment. Furthermore, parents express a high level of satisfaction with the service. Given the strong agreement reached with a GMA expert, the technique of GMA assessors achieving a consensus is encouraged. e NeuroMotionTM app allows researchers to examine GMA in larger groups of newborn babies in a home environment.

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