

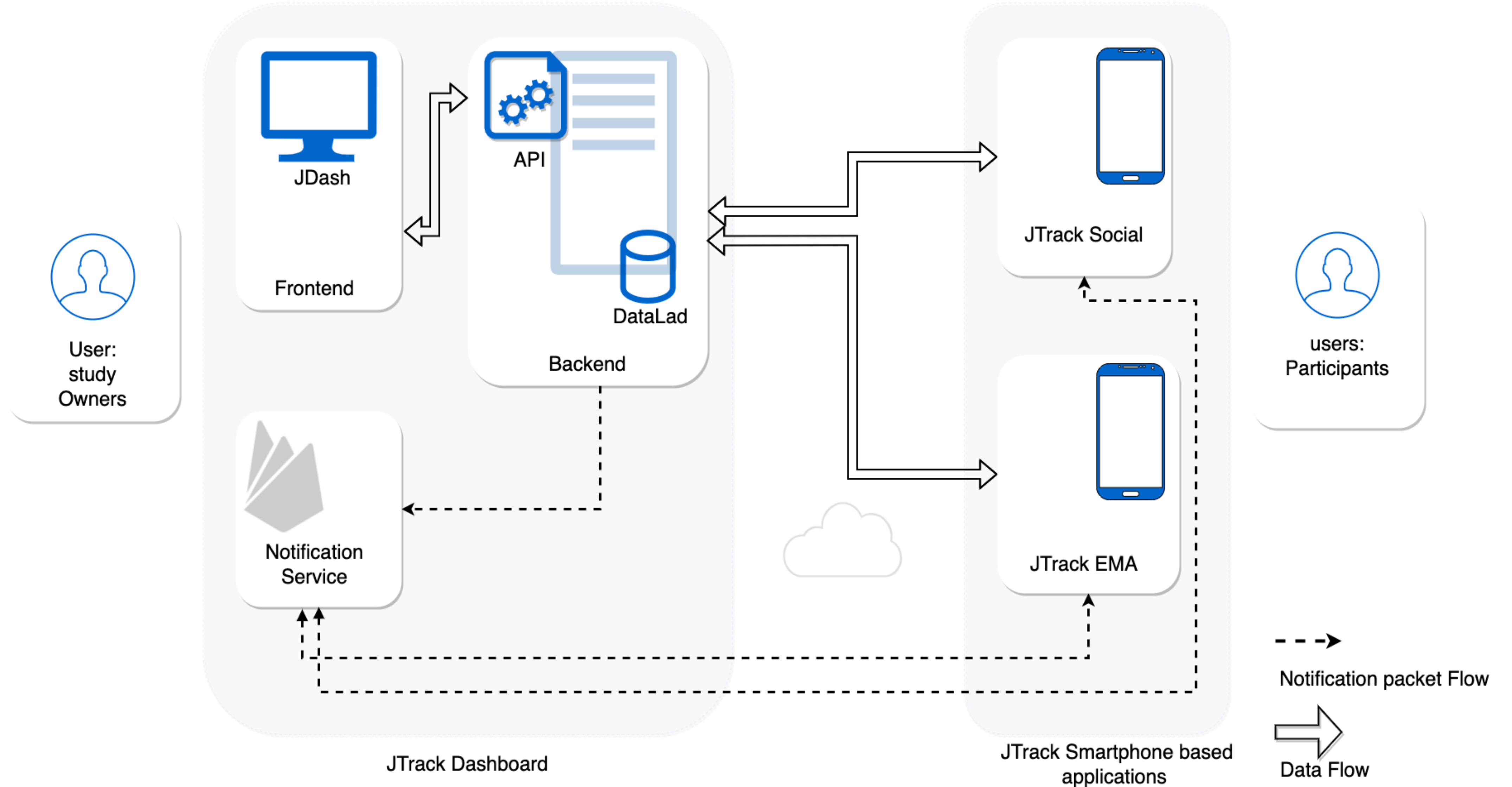
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JTrack System Architecture

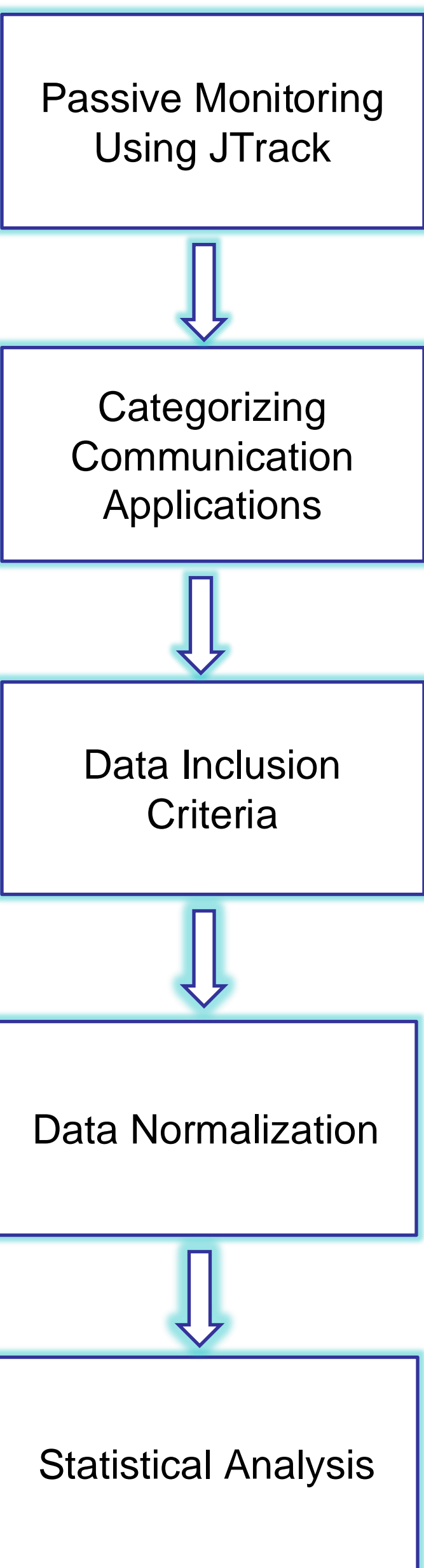
A Scalable Digital Research Infrastructure for Smartphone-Based Behavioural Studies

- Easy administration**
Create, share and analyse studies in a few clicks
- Passive monitoring**
Via Smartphone sensors such as gyroscope, GPS or accelerometer
- Active monitoring**
Questionnaires or ecological momentary assessments



ASD Study

Baseline:
In-clinic diagnosis



The study passively monitored **44 ASD** and **54 TD** participants ((Mean ± SD) ASD: 32.8 ± 12.0, TD: 35.8 ± 15.4) for **122 days** using the "**JTrack Social**" app to analyze daily communication patterns

Daily average usage is computed as foreground time for each application. Communication types were categorized into **verbal** (i.e. phone calls), **written** (i.e. SMS), **mixed** (i.e. WhatsApp), and **total** communication (sum of all)

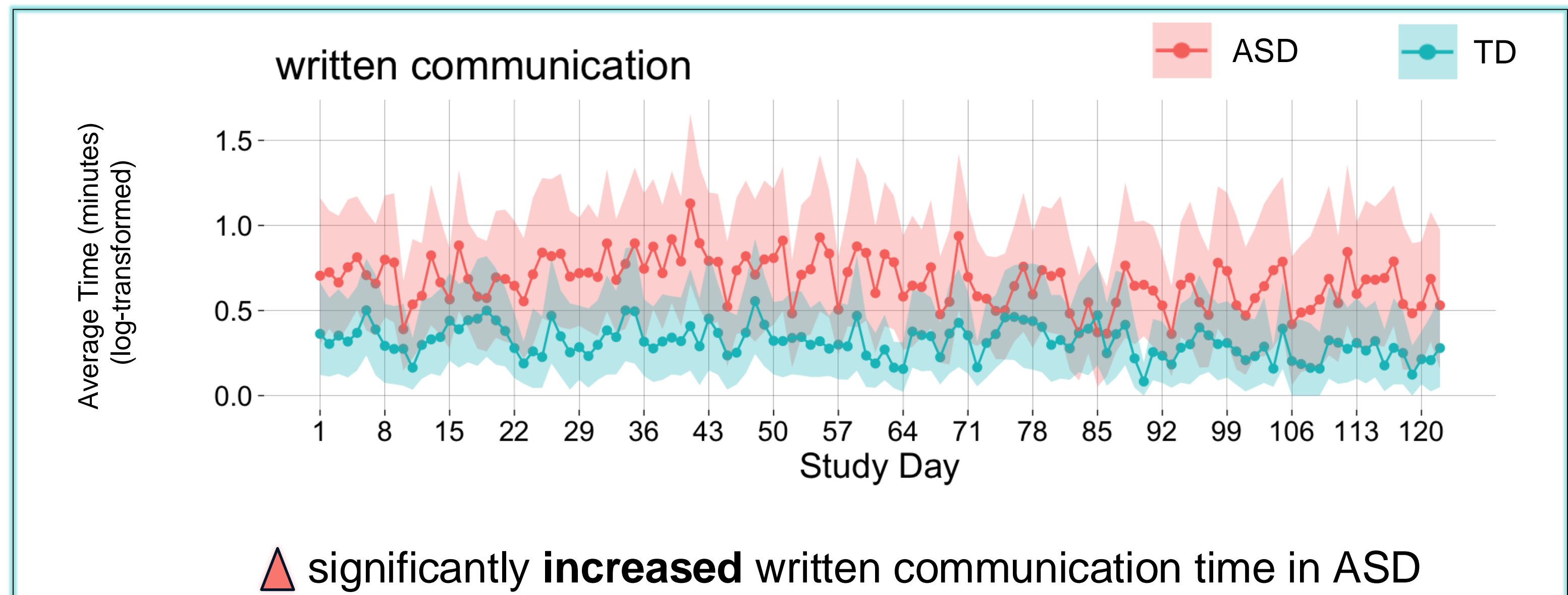
The analysis included participants with at **least 60 distinct days** of available data. Only data from Android-based smartphones were considered. Participants meeting the criteria: **26 ASD, 32 TD**.

Data were log-transformed for normalization purposes.

The average difference in communication time across groups was compared using a Generalized linear mixed model (GLMM). The analysis accounted for **fixed factors** such as **age, gender, and time** (days). A **random intercept** was included for each **subject** to account for individual variability.

Results

Participant Data: 58 participants with data for ≥60 days (32 ASD, 26 TD).
Verbal Communication: Higher daily usage in TD group (p=0.002). **Written Communication:** Higher daily usage in ASD group (p<0.001).



Discussion

Insights: DBs provide high-resolution, ecologically valid insights into the communication preferences of ASD individuals. Findings support the preference for text-based communication.

Implications: Personalized communication and support plans enhance social outcomes, educational experiences, and well-being for ASD individuals through tailored interventions.

Future Directions: Incorporating diverse communication methods in intervention strategies and utilizing DBs can significantly enhance the understanding and support of neurodevelopmental conditions such as ASD.

Idea to Acquisition



Create studies and questionnaires



Generate and send QR code to participants

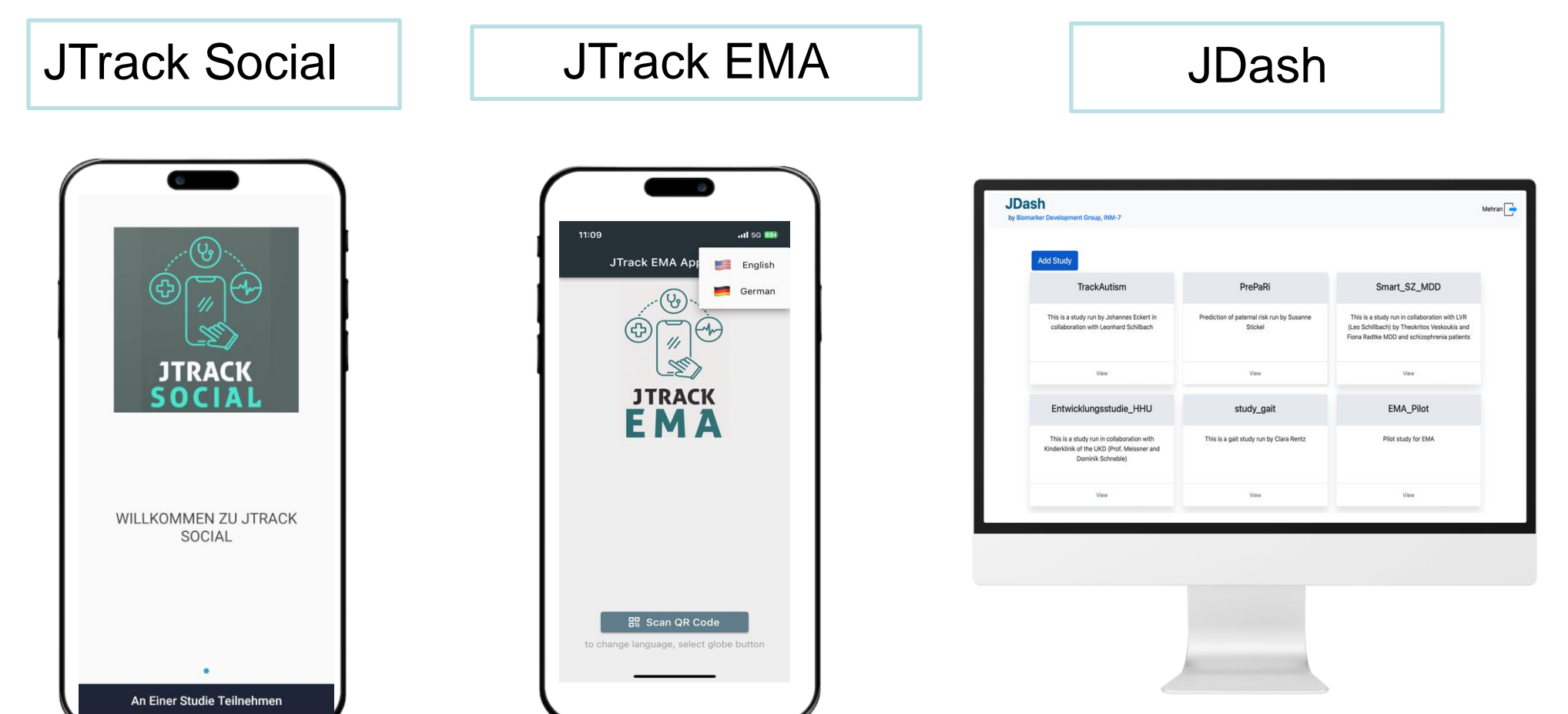


Participant registers, complete tasks, transmits acquired data



Manage, control and download via JDash

JTrack Ecosystem



For more information and accessing the links of apps and dashboard

