Supplementary material:

Dynamic Analysis of GM and WM Functional Network Connectivity in Individual with TLE

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1. Optimal number of states for dFNC:

For computing the optimal number of states, ratios of within-cluster to between-cluster distance at different values of *ks* (ranging from 2 to 15) were illustrated in Fig. S1. The elbow criterion determined the optimal number of clusters at *ks*=6.

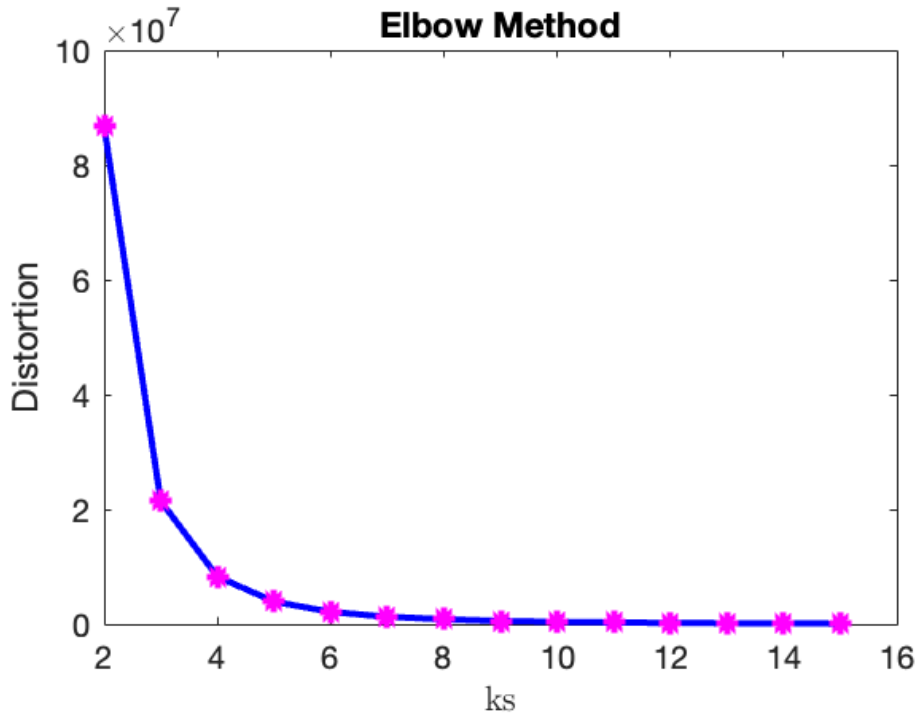

Figure S1: Distortion measures as cluster validity index. The elbow criterion determined the optimal number of states, i.e., *ks*=6. At the optimal number of states, the distortion (The ratios of within-cluster to between-cluster distance) followed linear trends.

2. dFNC states from entire dataset:

Irrespective of the groups, the patterns of FNC across the six states are illustrated in Fig. S2. It can be observed that state 1 was dominated by higher positive FNC patterns, while states 4 and 6 exhibited relatively higher negative connectivity patterns. States 5 displayed relatively low negative FNC patterns. State 3 represents dominating GM - GM connectivity, and state 1 represents strong WM - WM and GM - WM connectivity. State 2 represents high WM-WM connectivity. State 4 kind of mixed connectivity

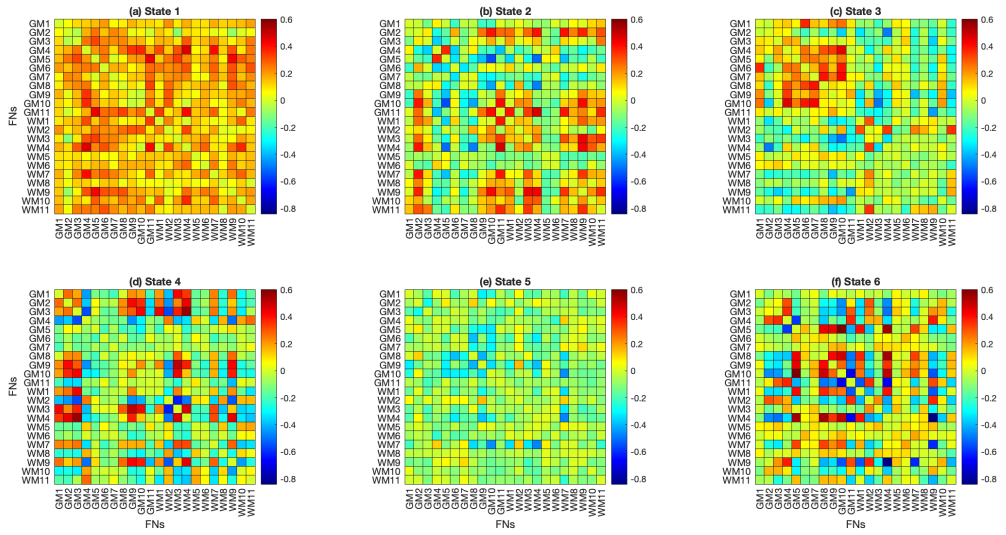

Figure S2: dFNC states. dFNCs were obtained by computing FCs among networks (GM and WM) in each sliding window. State patterns are obtained using K-means clustering of all the windowed FNCs across time and subjects.

3. State-changing probabilities:

The state-changing probabilities were shown in Fig.S3. It can be seen that the state-changing probability of the HC group is higher than that of the TLE group in both lTLE and rTLE. The average state-changing probabilities of HC, lTLE, and rTLE are 0.038, 0.032, and 0.033, respectively.

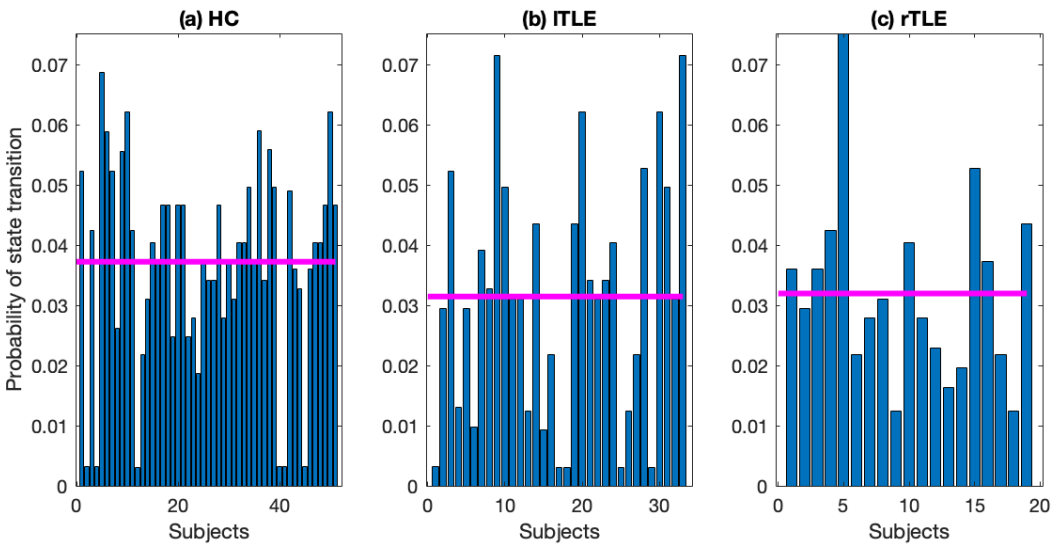

Figure S3: State changing probability of (a) HC, (b) left TLE, and (c) right TLE. The horizontal magenta line represents the average state-changing probability across subjects. The average state-changing probabilities of the HC, lTLE, and rTLE are 0.038, 0.032, and 0.033, respectively.