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PSYCHOLOGY

BASELINE EXECUTIVE FUNCTION PROFILES AND ORGANIZATIONAL TASK PERFORMANCE AMONG AUTISTIC ADOLESCENTS IN A KENYAN SPECIAL EDUCATION SETTING

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ABSTRACT

Purpose of Study: The study described baseline executive-function profiles and organizational task performance among autistic adolescents in a Kenyan special education setting. It also examined individual patterns across informant-rated executive-function characteristics and directly observed performance.

Problem Statement: Challenges in executive functions are commonly reported among adolescents with autism spectrum disorder. These difficulties may impact on execution of complex, goal-directed tasks. Organizational skills are a function of executive functions representing high order processes such as initiation, working memory, organization, and self-monitoring. Informant-rated measures are commonly used to assess executive provide restricted information about how these processes manifest during specific functional tasks.

Methodology: The study employed an exploratory descriptive design embedded within a multiple-baseline single-case experimental design involving five autistic adolescents aged 14–18 years at Nile Road Special School and Vocational Centre in Nairobi, Kenya. Executive-function characteristics were assessed using the Behavior Rating Inventory of Executive Function, Second Edition (BRIEF-2), with parent and teacher ratings where available. Direct

observations were conducted during baseline sessions using a researcher-developed 17-step task-analysis checklist covering workspace organization and digital data entry.

Result: BRIEF-2 teacher and parent ratings showed varied executive-function profiles, with individual concerns in initiation, working memory, cognitive regulation, and organization of materials. Despite these differences, independent baseline performance was uniformly low across all five participants (5.88%–10.30% of task steps), with wide variation in initiation latency (7.86–135.4 seconds), errors, and self-corrections. Informant ratings and direct task observation therefore offered complementary views of individual functioning, though P1's total task time needs verification because the table and narrative are inconsistent.

Recommendation: Larger, more diverse studies are needed to confirm how executive-function ratings relate to observed performance in autistic adolescents and to guide context-appropriate assessment and support.

Keywords: *Autism spectrum disorder; executive functioning; organizational task performance; direct observation; functional assessment; special education.*

INTRODUCTION

Executive functions are a collection of high order cognitive processes that enable goal-directed behavior including inhibition, working memory, cognitive flexibility, planning, organization, initiation, and self-monitoring (Baggetta & Alexander, 2016; Cristofori et al., 2019).Research has documented executive function difficulties among autistic individuals with meta-analytic evidence indicating differences across several executive-function domains (Demetriou et al., 2018, 2019; Lai et al., 2017). Such difficulties may have implications for the performance of complex everyday activities requiring individuals to coordinate multiple actions and work towards defined goals.

Executive functions and organizational skills are related but conceptually distinct. Executive functions refers to the cognitive processes that support goal-directed behavior, whereas organizational skills concern the application of these processes during practical activities (Ashraf et al., 2021; Caldani et al., 2023; Cole et al., 2024; Hooper et al., 2017). Organizational performance may involve initiating tasks, arranging materials, following sequences, monitoring progress, identifying errors, and completing activities with minimal assistance. Distinguishing between these constructs is important when investigating the functional demands experienced by autistic adolescents.

Adolescence brings increasing expectations for independence in educational, daily living, and vocational activities. These activities require individuals to initiate tasks, organize materials, maintain task sequences, and monitor performance. Difficulties in these areas may constrain independent functioning even where the individual possesses the component skills required to complete steps (Hong et al., 2017; Kenny et al., 2024). Directly examining performance during a multistep task may therefore provide useful information about the practical demands associated with organizational functioning.

However, the assessment of executive functioning presents methodological challenges. Informant-rated instruments, including the Behaviour Rating Inventory of Executive Function, provide information about executive-function behaviours as perceived by parents and teachers in everyday contexts. Such ratings may not fully represent performance during a particular

structured activity. Conversely, performance-based observations capture behaviour under specified task conditions but may not represent functioning across the full range of everyday environments. Combining these assessment approaches may therefore provide complementary information about individual strengths, difficulties, and support needs (Demetriou et al., 2019; Silva et al., 2022).

This issue is particularly relevant in low- and middle-income settings, where the availability of contextually appropriate assessment evidence remains a concern. Nyongesa et al. (2019) highlighted the predominance of high-income-country research in the literature on adolescent executive-function assessment and the limited reporting of psychometric evidence for many measures. Research on autism education in Kenya has also identified challenges involving specialized training, educational resources, and support for learners with diverse needs (Abubakar et al., 2022).

Against this background, the present study examined BRIEF-2 executive-function profiles alongside directly observed performance during a structured workspace-organization and data-entry task among five autistic adolescents in a Kenyan special education setting. By describing participant-level profiles and baseline performance, the study sought to provide preliminary evidence about the complementary information obtained from informant ratings and direct functional observation.

STATEMENT OF THE PROBLEM

Executive-function difficulties among autistic adolescents may affect the initiation, organization, sequencing, and monitoring of complex activities. Although these difficulties have been widely investigated internationally, evidence describing how informant-rated executive-function characteristics correspond with observed organizational task performance in Kenyan special education settings remains limited.

Research on autism education in Kenya has examined educational experiences, access barriers, stakeholder perspectives, and institutional challenges (Abubakar et al., 2016, 2022; Baumberger et al., 2023). However, the specific patterns of baseline organizational performance among autistic adolescents in special-school and vocational settings require further investigation. Moreover, standardized informant ratings and direct task observations capture different aspects of functioning, making it important to examine what each approach contributes to understanding individual support needs.

The present study addressed this gap through a descriptive investigation of five autistic adolescents, combining BRIEF-2 profiles with direct observation of performance on a structured 17-step organizational and data-entry task. The study aimed to characterize individual baseline performance patterns and identify preliminary implications for individualized educational support and future research on contextually appropriate functional assessment. Its small, single-site sample limits generalization but provides a basis for further investigation.

RESEARCH OBJECTIVES

i. To describe participants' BRIEF-2 executive-function profiles, with particular attention to domains relevant to organizational functioning.

ii. To document baseline organizational task performance, including independent task-step completion, initiation latency, task duration, errors, and self-corrections.

iii. To examine participant-level patterns across informant-rated executive-function characteristics and directly observed task performance to identify preliminary implications for individualized support and future assessment research.

RESEARCH QUESTIONS

i. What executive-function profiles are reflected in participants' BRIEF-2 ratings, particularly in domains relevant to organizational functioning?

ii. What organizational behaviours and task-performance patterns are observed during baseline sessions of the structured functional task?

iii. What preliminary insights emerge when informant-rated executive-function profiles are considered alongside observed task performance?

THEORETICAL FRAMEWORK

The study was anchored in the biopsychosocial model which posits that health outcomes are determined by the complex interaction between biological, psychological, and social elements Engel (1977). From this model, autistic characteristics such as abnormal brain connections can result from genetic predispositions and neurobiological differences (Bhandari et al., 2020; Guo et al., 2019; Thérien et al., 2022).. Autism-related neurodevelopmental differences shape executive capacities linked to planning, working memory, shifting, and regulation. (Lai et al., 2017). Additionally, psychological factors that influence how autistic adolescents' perception of their surroundings include cognitive functions, emotional control, motivation, anxiety, self-control and task understanding. Social factors such as modeling, prompts, feedback, routines, and contextual supports (family relationships, educational environments, and society's perceptions of autism) may have a significant impact on how people on the spectrum experience their lives and shape observable performance and learning opportunities. This paradigm provides better understanding of how cognitive difficulties interact with biological predispositions and social settings to impact the organizational capacities of adolescents with autism (Lehman et al., 2017, 2017; Silva et al., 2013).

EMPIRICAL REVIEW

Evidence of executive function difficulties in autism is recorded in vast literature. A meta-analysis by Demetriou et al., (2018) evaluated 235 studies involving 14,081 participants and found a moderate overall reduction in executive functioning in autism, with difficulties evident across several executive function domains. The findings underpin broad executive functioning difficulties rather than a single impaired domain. Reviews of the autism literature also indicate that executive functioning difficulties affect functional behaviors such as planning, cognitive flexibility, working memory, inhibition, initiation, and goal directed behavior (Demetriou et al., 2019; Lai et al., 2017). These difficulties have direct implications for completing multistep activities and managing everyday demands independently (Kenny et al., 2019; Singh, 2016). Other long-term research revealed different developmental patterns in high-likelihood and autistic groups, and parent reports indicate that EF problems are growing even when test results seem to be fairly steady (St. John et al., 2026).

Informant-based measures such as the BRIEF provide valuable information about executive-function behaviours as expressed in everyday contexts (Hendrickson & McCrimmon, 2019). However, concerns remain regarding the extent to which conventional executive-function assessments reflect performance in complex real-world activities. Current empirical research on executive function (EF) assessment using standardized tools reveals several significant gaps including lack of validation, lack of consensus on the most effective, cultural bias and under-representation of the available tools (Idowu et al., 2024). These discrepancies have resulted in inconsistent results inconsistent results, challenges in identification of declining functional abilities, and negligence of cultural and socio-economic factors that affect cognitive performance (Idowu et al., 2024; Kusi-Mensah et al., 2022; Laurence, 2026).

Assessment methodology presents an important empirical concern. Nyongesa et al. (2019) reviewed 705 studies of executive functioning in adolescents and identified 338 different measures. The Behavior Rating Inventory of Executive Function was identified as the most frequently used measures. However, only 48 studies reported reliability or validity evidence, and almost 95% of the studies were conducted in high income countries. The authors therefore noted limited evidence supporting the psychometric robustness of executive function measures across different contexts. This finding is particularly relevant to research involving adolescents in low- and middle-income settings, where cultural, educational, and socioeconomic factors may influence observed executive functioning.

Evidence also suggests that executive functioning findings vary according to the assessment method. Demetriou et al. (2018) found larger effects for questionnaire -based assessments than for psychometric and experimental measures. Demetriou et al. (2019) similarly argued that a comprehensive understanding of executive functioning in autism requires integration of neuropsychological tests, experimental tasks, and behavioral ratings. These findings support the use of multimethod assessment rather than reliance on a single source of information considering the biological and psychological influence in executive functioning, are progressively considering multi-model approach in assessments (Friedman & Miyake, 2017; Laurence, 2026). However, concerns remain regarding the extent to which conventional executive-function assessments reflect performance in complex real-world activities. Reviews of ecological validity have highlighted the limited correspondence between some executive-function measures and everyday functioning and have called for greater attention to context and functional outcomes (Suchy et al., 2024; Wallisch et al., 2018).

Despite this evidence, relatively little empirical attention has been given to the relationship between reported executive functioning difficulties and performance on complex, multistep organizational tasks among autistic adolescents. Standardized behavioral ratings provide information about everyday executive functioning, while direct observation can capture how these difficulties manifest during an actual functional task. Examining both sources of information may therefore provide a more ecologically relevant profile of organizational functioning. The present study addressed this gap by combining BRIEF 2 ratings with direct observation of performance during a structured organizational and data entry task among autistic adolescents.

Emerging research involving autistic adolescents provides support for examining functional performance directly. Tamm et al. (2024), for example, used the Weekly Calendar Planning Activity as a performance-based measure of executive functioning among 39 adolescents with ASD. Most participants demonstrated difficulty with the task, yet appointment accuracy and

planning time were not significantly associated with caregiver-rated executive functioning, suggesting that informant ratings and performance-based assessment may provide different information. Similarly, a pilot study of the Computerized Functional Skills Assessment and Training program found that autistic adolescents and young adults made more errors on technology-based daily living tasks, while task performance was associated with executive functioning within the autistic group (Harvey et al., 2020).

Burroughs et al. (2025) noted substantial inconsistency in how ecological validity is defined and demonstrated, emphasizing the need to distinguish similarity to real-world tasks from evidence that assessment performance actually relates to functional outcomes. These concerns support the use of complementary assessment approaches that consider both broad executive-function characteristics and performance under meaningful task demands. However, evidence examining the convergence and divergence between broad executive-function profiles and directly observed performance on complex organizational tasks remains limited, particularly in special-education contexts and low- and middle-income settings. This gap provided the rationale for the present study, which examined executive-function profiles alongside directly observed performance on a complex organizational task among adolescents with ASD in a Kenyan special-school context.

CONCEPTUAL FRAMEWORK

The study conceptualized organizational task performance as the outcome of interacting biological, psychological, and social-environmental influences, expressed during a structured task and reflected in BRIEF-2 ratings. Figure 1 provides a diagrammatic representation of the study variables and the outcome of their interaction

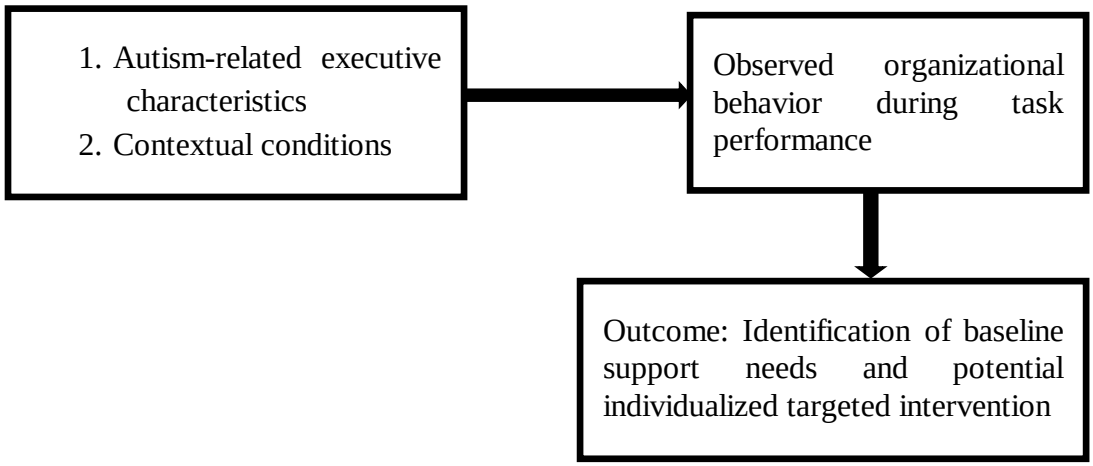


Figure 1: Conceptual Framework

Source: Author, 2026

RESEARCH METHODOLOGY

Embedded within a multiple-baseline SCED across five participants, this exploratory descriptive study characterized baseline executive-function profiles and organizational task

performance among adolescents in a Kenyan special education context. It integrated standardized psychometric assessments with repeated unprompted behavioral observations. Setting and Participants: The investigation was conducted at Nile Road Special School and Vocational Centre in Nairobi, Kenya. Participants comprised five adolescents with confirmed diagnoses of ASD (aged 14 to 18 years; 4 males, 1 female) enrolled in the vocational program. Autism diagnoses were established from school records and parental reports, while the Childhood Autism Rating Scale (CARS) was administered to confirm the diagnosis and classify the autism severity. Eligibility was restricted to adolescents with mild-to-moderate autism.

Participants were assessed using the Behavior Rating Inventory of Executive Function, Second Edition (BRIEF-2), which indexes everyday executive regulation across behavioral, emotional, and cognitive domains including initiation, working memory, planning, and task monitoring. Target Organizational Task Analysis: The functional activity was an operationalized 17-step task analysis integrating physical workspace organization and digital data entry.

Data Collection and Direct Observational Measures: Baseline observation sessions were conducted individually. Participants were provided with standard workspace materials and given a single initial verbal instruction: 'Please set up your workstation and complete the data entry task.' No additional prompting, modeling, or assistance was provided. Trained observers recorded: (a) Primary Dependent Variable: Percentage of steps completed independently without assistance (calculated as [Independent Steps Completed / 17] × 100); (b) Process Analytics: Latency to initiate Step 1 (seconds), physical organization duration (minutes), digital data-entry duration (minutes), total task time (minutes), error typologies (omission, sequence, motor/execution), and self-corrections.

Inter-Observer Agreement and Procedural Fidelity**:** Inter-observer agreement (IOA) was assessed across 20% of baseline sessions by two independent observers. IOA was calculated by dividing the number of agreements between the two independent observer by the total number of agreements and disagreements, then multiplying by 100. Session-level agreement percentages were averaged to obtain the mean interobserver agreement across the observed sessions. Mean IOA for independent step completion was 92.4 % (range: 88.2%–100.0%). Procedural fidelity for baseline condition administration was 100%.

RESULTS AND DISCUSSION

The unit of analysis was the 5 adolescents' diagnosis of mild to moderate autism. In order to offer context for interpreting each adolescent's performance throughout the study phases, Table 1 presents participants' demographic and autism severity level, and BRIEF-2 Global Executive Composite T-Scores.

Table 1: Socio-Demographic Characteristics, and CARS -2 Scores

Participant	Sex	CA Years	Age at Autism Diagnosis (Years)	CARS-2	Symptom Severity level	Duration in current schools	Educational vocational level
P1	Female	16	$2_{1/2}$	33	Moderate	4 Years	Intermediate
P2	Male	18	7	31	Moderate	2 Years	Vocational
P3	Male	14	7	16	Minimal	1 Years	Pre-vocational skills
P4	Male	16	15	30	Moderate	1 Year	Pre-vocational skills
P5	Male	14	4	27	Mild	1 Month	Orientation/planning

P1 = Participant 1; P2 = Participant 2; P3 = Participant 3; P4 = Participant 4; P5 = Participant

The participants were aged between 14 to 18 years, and comprised four males and one female. They varied in age at diagnosis, educational history, duration of enrolment in special education, communication abilities, and social functioning. CARS scores suggested varying levels of autism symptoms among the five participants. Three participants P1 (33), P2 (31) and P4 (30) fell within the moderate range. P3 (16) and P5 (27) fell within the mild to moderate range. None of the participants scored within the severe range. These findings indicate variation in autism symptom severity within the study sample.

Three participants (P1, P3 and P4) had previously attended integrated schools before transitioning to special education, while P2 had attended several special schools and P5 had joined the study school only one month before data collection. All participants had acquired basic daily living skills to varying degrees, although some required supervision or assistance with complex activities. Communication and social functioning varied, with P1 being generally non-verbal and showing limited reciprocal interaction, P3 demonstrating age-appropriate speech and greater participation in group activities, and P2, P4, and P5 showing functional speech or vocal communication alongside limitations in expressive, reciprocal, or conversational communication. Participants showed strong interest in computers, phones, or other electronic devices, providing relevant context for interpreting their engagement and performance during the computer-based data entry task.

Baseline functioning was examined using parent and teacher ratings on the Behavior Rating Inventory of Executive Function, Second Edition (BRIEF2), together with observed baseline performance on the 17-step data entry task. The BRIEF2 results were interpreted descriptively at participant level in order to characterize individual executive functioning patterns rather than estimate a population parameter. For BRIEF-2 interpretation, T scores below 60 were treated as average, scores from 60 to 64 as mildly elevated, scores from 65 to 69 as potentially clinically elevated, and scores of 70 or higher as clinically elevated. Higher scores indicate greater executive functioning difficulty. Teacher ratings were unavailable for P5. Table 2 below presents the standardized T-scores from the BRIEF-2 Parent and Teacher rating forms across all five participants. T-scores of 65–69 represent potentially clinically elevated difficulties, while scores of 70 and above indicate clinically significant impairment (Gioia et al., 2024).

Table 2: BRIEF-2 Clinical Scale T-Scores by Participant and Informant

	P1		P2		P3		P4		P5	
Clinical Scale	**Par**	**Tch**	**Par**	**Tch**	**Par**	**Tch**	**Par**	**Tch**	**Par**	**Tch**
Inhibit	41	58	52	**77****	40	49	49	49	**70****	NA
Self-Monitor	45	51	59	**84****	**63**	63	44	47	**63**	NA
Shift	42	58	**66***	**90****	57	51	44	51	**63**	NA
Emotional Control	54	52	**64**	**90****	45	47	47	53	**60**	NA
Initiate	53	**81***	55	**82****	59	58	43	48	**63**	NA
Working Memory	53	**70****	59	**80****	**61**	**71****	53	59	**76****	NA
Plan/Organize	46	**63**	53	**65***	**64**	**63**	50	55	**69***	NA
Task-Monitor	57	**61**	49	**67***	59	51	45	48	56	NA
Organization of Materials	39	**82****	49	**73****	43	54	49	59	49	NA

**potentially clinically elevated T-scores, ** A clinically elevated T-score. Tch = Teacher Form; Par = Parent Form.*

The valid BRIEF-2 scores for each participant revealed substantial variations across executive-function domains and between informants as shown in Table 2 above. In the context of this validity, the following were areas of concern for every participant. Ratings of P1s executive function exhibited in everyday behavior reveal some areas of concern. Participant 1's teacher ratings indicated elevated concerns in Initiate (T = 81), Organization of Materials (T = 82), and Working Memory (T = 70), whereas parent ratings were within the expected range across all scales. Participant 2 had consistently elevated teacher-reported concerns, with scores ranging from 65 to 90 across the nine clinical scales, including T = 90 for Shift and Emotional Control.

Parent ratings for Participant 2 were lower overall, although Shift was elevated (T = 66) and Emotional Control was mildly elevated (T = 64). Participant 3 generally showed scores within or close to the expected range, with parent ratings of 63 for Self-Monitor and 64 for Plan/Organize, and a teacher-rated Working Memory score of 71. Participant 4 showed scores within the expected range across all clinical scales for both informants. Participant 5, for whom only a parent rating was available, showed the highest concern in Working Memory (T = 76), with Plan/Organize at T = 69 and several other scales showing mild elevation in the 60–63 range. Overall, the profiles demonstrate variability across executive-function domains and between informants.

The sample showed distinct executive-function profiles, with the greatest apparent support needs in P2, followed by P1 and P5, and milder or minimal BRIEF-2 concern in P3 and P4. Overall, results showed heterogeneous executive-function needs, especially in flexibility, working memory, initiation, and organization, with meaningful variation across school and home informants.

The index scale include the Behavioral Regulation Index (BRI) which comprise the Inhibit and Self-Monitor scales; the Emotional Regulation Index (ERI) which comprise the Shift; Emotional Control scales; and the Cognitive Regulation Index (CRI) comprising the Initiate, Working Memory, Plan/Organize, Task-Monitor, and Organization of Materials scales and

Global Executive Composite (GEC) T-scores for the five participants, as reported by their parents and teachers, provide an overview of broader executive functioning across the three index domains and the overall executive-function profile. Table 3 below provides summaries for the index scales as well as the GEC.

Table 3: T Scores and Interpretive Classifications for BRIEF-2 Index Scales by Participant and Informant

Participant	Index Scale	Parent T Score	Parent Classification	Teacher T Score	Teacher Classification
P1	BRI	42	Average	56	Average
	ERI	48	Average	58	Average
	CRI	49	Average	**78**	Clinically elevated
	GEC	47	Average	**69**	Potentially elevated
P2	BRI	55	Average	**80**	Clinically elevated
	ERI	**65**	Potentially elevated	**>90**	Clinically elevated
	CRI	53	Average	**74**	Clinically elevated
	GEC	57	Average	**82**	Clinically elevated
P3	BRI	49	Average	55	Average
	ERI	50	Average	50	Average
	CRI	50	Average	56	Average
	GEC	56	Average	55	Average
P4	BRI	48	Average	48	Average
	ERI	**70**	Clinically elevated	52	Average
	CRI	50	Average	54	Average
	GEC	55	Average	52	Average
P5	BRI	**69**	Potentially elevated	Not available	Not available
	ERI	**62**	Mildly elevated	Not available	Not available
	CRI	**65**	Potentially elevated	Not available	Not available
	GEC	**71**	Clinically elevated	Not available	Not available

BRI = Behavioral Regulation Index, ERI = Emotional Regulation Index, CRI = Cognitive Regulation Index, GEC = Global Executive Composite.

Table 3 shows participant-specific patterns of executive-function concerns based on the BRIEF-2 index scales. P1 showed a specific concern in cognitive regulation according to the teacher rating, with a CRI T score of 78, while the parent ratings were within the average range. From teacher's rating the GEC for P1 was potentially elevated (T=68). P2 showed the most extensive concerns, particularly in emotional regulation and behavioral regulation according to the teacher, with elevated scores across all teacher-rated indices, while the parent rating indicated a concern in emotional regulation. P3 showed no clinically concerning elevations across the index scales from either informant. P4 showed a parent-reported concern in emotional regulation, with the remaining indices within the average range. P5, for whom only a parent rating was available, showed concerns in behavioral and cognitive regulation and an elevated GEC, (T=69, T=62, T=65; T=71 respectively), indicating broader executive-function difficulties. These findings provided contextual information on executive-function difficulties associated with participants' baseline organizational performance.

Baseline performance was established from repeated observations conducted before introduction of POV video modeling. Independent step completion was scored when a participant completed a step correctly, and without assistance. Errors were recorded when a participant performed a step incorrectly or omitted a required action. Self-corrections were documented when a participant independently identified and corrected an error before receiving assistance. Latency was recorded as the time elapsed between the task initial instruction and participant's initiation of the task. Task duration was documented (in minutes and seconds) from initiation to completion. A 15-minute limit session time was predetermined. For sessions in which participants did not complete the task within the 15-minute limit, the session duration was recorded up to the point of termination. Table 4 below presents the baseline mean performance across participants.

Table 4: Mean Baseline Performance in the Organizational Task Across Participants

Participant	Baseline sessions (n)	Mean % independent	Mean latency (sec)	Mean organization time (min)	Mean data-entry time (min)	Mean total task time (min)	Mean errors	Mean self-corrections
P1	4	10.29%	67.75	0.83	4.63	5.46	11.25	0.50
P2	5	8.24%	135.40	0.75	8.26	9.01	11.80	1.20
P3	7	8.40%	7.86	0.69	7.54	8.23	7.14	2.00
P4	9	5.88%	9.56	0.68	9.78	10.46	5.67	0.44
P5	11	6.95%	34.64	0.91	9.27	10.18	6.09	1.18

Independent steps scored out of 17 task steps

The primary outcome was the percentage of the 17 task-analysis steps completed independently in each session. Baseline performance was examined for level, trend, and variability, while process variables and executive-function characteristics provided additional information about the nature of the observed difficulties.

The five participants' mean baseline performance over a range of session counts (4–11) is shown in Table 3 above. Completion of independent tasks was continuously low, ranging from 5.88% for P4 to 10.29% for P1. This suggests that prior to assistance, each participant only finished a small percentage of the 17 task steps on their own. From 7.86 seconds for P3 to 135.40 seconds for P2, the mean latency varied significantly, indicating significant individual variances in starting the activity. While the mean data-entry time varied from 4.63 minutes for P1 to 9.78 minutes for P4, the mean organization time varied from 0.65 to 0.91 minutes. As a result, P1's mean total task time was 5.46 minutes, whereas P4's was 10.46 minutes. Additionally, mean self-corrections ranged from 0.44 for P4 to 2.00 for P3, whereas mean errors varied from 5.67 for P4 to 11.80 for P2.

DISCUSSION

The baseline data identified individualized organizational profiles and varying levels of task support need among the five adolescents. BRIEF-2 ratings showed substantial variation between-participant and between-informant, which is expected in autism EF research rather than anomalous (Demetriou et al., 2019; Gentil-Gutiérrez, Santamaría-Peláez, Mínguez-Mínguez, Fernández-Solana, et al., 2022; Lai et al., 2017; Lee, 2026). BRIEF-2 profile suggests prominent difficulties in various clinical scales across participants including initiation,

working memory, planning/organization, task monitoring, and organization of materials, indicating a metacognitive pattern of executive dysfunction centered on cognitive regulation (Burroughs et al., 2025; Gentil-Gutiérrez, Santamaría-Peláez, Mínguez-Mínguez, González-Santos, et al., 2022). These findings underscore the value of examining individual executive-function profiles when identifying organizational support needs.

The Initiate scale reflects a learner's capacity to begin an activity independently and generate ideas, responses, or problem-solving strategies without external prompting. In the context of the 17-step task, initiation deficits explain prolonged baseline latency observed at the start of the session, which was evident for P1, P2 and P5 as shown in table 3. Additionally, difficulties with Initiate may help explain the long delays before starting, particularly for P2, whose baseline latency reached 135.4 seconds. Some learners may understand instructions but still struggle to begin acting without external support (Buckle et al., 2021). Functionally, this pattern implies that participants may struggle to begin tasks independently, retain and manipulate task information, sequence actions efficiently, monitor ongoing performance, and maintain an orderly workspace, creating cumulative barriers to accurate and independent task completion (Freeman & Paradis, 2023; Gardiner & Iarocci, 2018).

Working Memory was also important because participants had to remember their progress while handling documents and entering data on the computer. With elevated T-scores (T=70; T;80; T=61; T=71) for P1, P2, P3 and P5 respectively, deficits in working memory may have contributed to missed steps or difficulty completing the task (Chien et al., 2016; Cole et al., 2024; Johann et al., 2020). Difficulties with Plan/Organize may have affected the order of actions, such as attempting data entry before arranging the equipment. Four of the 5 participants had elevated T-scores of the clinical scale organization of material. Planning governs the temporal sequencing of behavior. Without an internalized plan, learners execute steps haphazardly—such as attempting to type data before positioning the keyboard or opening a software window before locating the correct folder(Anderle et al., 2025; Duncan, 2024; Escolano-Pérez et al., 2019; Olde Dubbelink & Geurts, 2017).

The task monitoring is an important component of organizational skills because it enables one to check work, identify errors, and make corrections while completing multistep activities. At baseline, participants made frequent errors (mean error = 8.39), while self-correction varied across individuals (range = 0.4-2.00 per session), suggesting differences in how effectively they monitored their progress and accuracy. Uncorrected errors may compromise task completion, while self-corrections indicate attempts to detect and rectify mistakes. These findings highlight the importance of developing monitoring skills to support accurate, organized, and independent task performance (Doenyas et al., 2019; Gioia et al., 2024; Pagán et al., 2023). As a construct of self-management, experts maintain that task monitoring helps autistic adolescents to achieve personal goals, manage daily life routines and manipulate complex tasks (Briesch et al., 2019; Roberts et al., 2019).

The BRIEF-2 Organization of Materials scale identifies difficulties keeping materials orderly and locating items when needed. At baseline, all five adolescents demonstrated low independent task completion (5.88%– 10.30%) on a task that required arranging physical materials before entering data on a computer. This suggests that organizing the workspace was an important practical demand within the broader organizational task. Research evidence suggests that difficulties arranging and accessing materials may disrupt the sequence of actions and make subsequent task completion more challenging (Cristofori et al., 2019; Dorminy et

al., 2009). These findings highlight the importance of assessing physical workspace organization directly alongside informant-rated executive-function profiles.

The BRIEF-2 domains do not include a dedicated time-management scale but time-related difficulties may be reflected in domains such as Initiate, Working Memory, and Plan/Organize (Wingren et al., 2022). Baseline observations showed considerable variation in task-initiation latency, from 7.86 seconds for P3 to 135.40 seconds for P2, while total task time ranged from 5.83 minutes for P1 to 10.46 minutes for P4. These differences suggest that participants varied in how quickly they initiated and completed the activity. However, shorter task duration did not necessarily indicate better organizational performance, as independent completion remained low across participants. Together, these findings underscore the importance of considering both time-related measures and task accuracy and independence when evaluating organizational skills.

Although BRIEF-2 composite scores (BRI, ERI, CRI, and GEC) provide a broad overview of executive dysfunction, examining individual scale profiles is essential to avoid masking specific clinical difficulties, particularly given conflicting evidence supporting either a general composite or a three-index factor model (Lace et al., 2022; Parhoon et al., 2024). These differences highlight the importance of cautious interpretation across populations. Accordingly, the present study considered BRIEF-2 composite, index, and relevant clinical scale scores alongside direct observations to contextualize participants reported executive-function difficulties and organizational task performance.

The observed variations in parent and teacher ratings highlight the importance of interpreting informant ratings in relation to the specific observations, social ecologies, and behavioral contexts on which they are based. Teachers observe adolescents navigating academic demands, group transitions, and independent material management, whereas parents observe functioning during home routines, self-care, and family interactions, where environmental accommodations and adult support may influence behavioral expression. Such discrepancies are consistent with literature indicating low-to-moderate inter-rater agreement between parent and teacher reports in autistic populations (Achenbach, 2011; De Los Reyes & Kazdin, 2005; Schneider et al., 2020). Differences may reflect context-specific variations in behaviour as proposed by the Attribution Bias Context and not necessarily a measurement error (De Los Reyes et al., 2015). Additionally, empirical evidence underscores that executive functioning in autistic adolescents may vary with task novelty, structural clarity, sensory demands, and affective states across settings (Kenny et al., 2024; Tschida & Yerys, 2022).

The observation that participants demonstrated uniformly low independent completion on the structured 17-step task during baseline—despite presenting with differing BRIEF-2 profiles—provides important descriptive insight into the relationship between standardized ratings and direct task execution (Demetriou et al., 2018). Crucially, low baseline performance on a structured task does not establish that participants with average informant ratings possess unrecognized or latent executive dysfunction(Gioia et al., 2024). Neuropsychological literature emphasizes that direct task execution is heavily moderated by non-executive and task-specific factors, including task novelty, technological familiarity, specific communication/instructional demands, motor requirements, and prior learning experiences (Demetriou et al., 2018; Gentil-Gutiérrez, Santamaría-Peláez, Mínguez-Mínguez, Fernández-Solana, et al., 2022).

The present study, however, was not designed to establish whether rating discrepancies stemmed primarily from contextual variation, rater expectations, or specific environmental

demands, these findings support a cautious interpretation of standalone informant reports (Anderle et al., 2025; Schneider et al., 2020). They emphasize the clinical and methodological necessity of multi-perspective triangulation combining parent and teacher reports with direct observational task analytics to construct a comprehensive, ecologically valid profile of executive function difficulties in autistic adolescents (Choi et al., 2026; Toplak et al., 2008; Tschida & Yerys, 2022).

CONCLUSION AND RECOMMENDATION

Executive-function difficulties in autism reflect both shared challenges and individual variability. The clinically elevated BRIEF-2 scales and the consistently low baseline performance pattern reflect the heterogeneity reported in autism research, where individuals may share functional challenges despite differing executive-function profiles. Findings also suggest that broadly average ratings do not necessarily translate into independent performance on complex, multistep tasks.

The baseline observations illustrated how executive-function demands may affect practical performance. Participants struggled to complete the organizational task independently, which required initiating actions, arranging materials, following a sequence, entering data, and monitoring accuracy. These demands correspond particularly with BRIEF-2 domains such as Initiate, Working Memory, Plan/Organize, Task-Monitor, and Organization of Materials. Previous research has similarly documented executive-function difficulties in autism that affect everyday activities beyond performance on isolated cognitive tests. Findings from the present study, however, reveals functional difficulties rather than demonstrating that specific BRIEF-2 scores caused or predicted individual task performance.

Additionally, EF difficulties may have implications beyond a single task, affecting adaptive behavior, educational participation, preparation for employment, independence, and quality of life. Difficulties initiating activities, organizing materials, and managing multistep demands may create barriers to independent functioning in school and vocational settings. Despite the limitation of the small sample size (n = 5), the study, however, offers preliminary contextual evidence on executive and organizational support needs in autistic adolescents in a Kenyan special education setting.

Triangulation of the preliminary results reveals a shared need for support in organizational task performance alongside considerable variability in reported executive-function profiles. This reinforces the value of combining standardized ratings with direct observation to understand both individual differences and the practical support needs of autistic adolescents which are individualized, functionally relevant intervention planning. Future research should evaluate multi-method baseline profiling across larger cohorts and rural special schools. Researchers should also develop adapted qualitative tools to capture the self-reported lived experiences of neurodivergent youth directly.

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