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**ARTICLE:** Data recording of seizures in children with autism spectrum disorder: description and social validation of computer-assisted measurement

Some children with autism spectrum disorder (ASD) experience seizures and associated staring episodes, loss of consciousness, weakened muscle tone, and myoclonic jerking. Data recording of seizure frequency, duration, and co-occurring behavior is necessary to document the effects of anti-epileptic medications, identify contextual influences on seizure expression, and differentiate seizures from other movement disorders.

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## Data recording of seizures in children with autism spectrum disorder: description and social validation of computer-assisted measurement Frank Bird<sup>1</sup>, Andew Shlesinger<sup>2</sup>, Kimberly Duhanyan<sup>2</sup> and

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clonic jerking. Data reco ment the effects of anti-

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seizures), jerking of (myoclonic seizures), to the ground (atonic sodes (absence seizure Documenting the p is necessary for seve support further asses and electrical activit 1986). Second, occ observation and data cephalogram ythms in the an EEG does t behavior. ctor of Clinical often

val and ac racking are

 sodes (absence seizure Documenting the Documenting the Social validity assessment with the students seven days per week. In the sezzle tracket system between the Documenting the classroom instructors and group home care providers is necessary for seve frequency and durat support plans, managed daily living routines, and con-dite sezzle tracket system. Second staff support plans, managed daily living routines, and con-tros sezzle control to social second support plans, managed daily living routines, and con-tros sezzle control to social second support plans, managed daily living routines, and con-tros sezzle control to social second support plans, managed daily living routines, and con-tros sezzle control to social second support plans, managed daily living routines, and con-responsibilities.
Social validity assessment The authors designed social validity questionnaires that contained five (school staff and parents) and three (neu-tion, and application of the computer-assisted system. in alconditions. The iables such as an see Finally, data can arrow enough in scope to promote a high return rat Finally, data can arrow enough in scope to promote a high return rate (Common and Lane, 2017, Luiselli, 2021, Schwartz and

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Questionnaire statements

Baer, 1991). Specifically, the statements posed to participants concerned utility of system data recording, facility of measurement, usefulness of documenting eizure frequency-duration, and decision making about setzuer trequency-duration, and decision making about the effectiveness of prescribed medications (the actual questionnaire statements are detailed in Table 1 and Table 2 with the accompanying results). Participants endorsed one of five numerical ratings per statement according to a Likert-type scale (1: strongly disagree, 2: disagree, 3: neither disagree nor agree, 4: agree, 5: strongly acree)

depicted in Table 1 and Table 2, each questionnare statement was a declarative sentence presented to the participants in an unbiased manner without implied responses. Data were quantified as the average numer-ical rating per questionnaire statement from the sum of item ratings divided by the number of participants responding to the statements.

password protocols. Once logged in, care providers cho tracker' icon which opens the webp Figure 1. Care providers enter the student (clien There is additional space in which record other information such as factor preceding the observed seizure eral comments Care providers click 'save' to enter, store the seizure data and report within Residential school protocol requires

In summary, monitoring and measuring the frequency, duration, and contextual variables associated with seizures in children with ASD is necessary for health monitoring. The computer-assisted system described in this report is based on currently available information technology and offers practitioners and their families a user-friendly methodology to benefit treatment planning.

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Questionnaire statements

Table 2. Rank ordered social validity ratings by parents (N = 11) and

Table 1 shows the questionnaire statements and average numerical rating per statement endorsed by school staff (return rate = 88.0%) and Table 2 shows the questionnaire statements and average numerical rating per statemuch statuted with a very state of the stat

('agree') and 5 ('strongly agree') for all statements con

tained in the questionnaires. Figure 3 presents these numerical ratings averaged for the full questionnaires

among the three participant groups: school staff (M = 4.5), parents (M = 4.5), and neurologists (M = 4.8).



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Rank ordered social validity ratings by school staff (N = 2

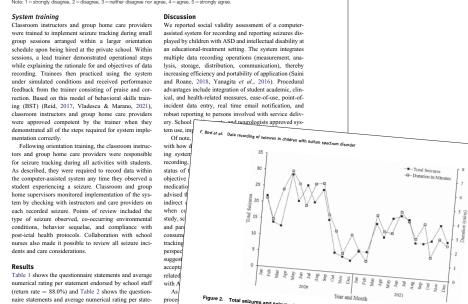
tem enables care providers to record

primary teacher, and 3-4 teacher assistants. In the Seizure tracker system design and on group homes, day and overnight care providers were present with the students seven days per week. The assessment records, reports, and provides

Table 2 with the accompanying results). Participants endorsed one of five numerical ratings per statement according to a Likert-type scale (1: strongly disagree, 2: strongly agree). The questionnaires were distributed to the partici-pants via an online platform (SurveyMonkey®) which they were requested to complete anonymously and return on or before a specified deadline date. As depicted in Table 1, and Table 2, each questionnaire statement vas a declarative sentence presented to the

consume tracking perspec suggest accepta related with A As proce such tion There

Average rating



rerage numerical rating per questionnaire dent groups.

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. disagree, 3 = neither disagree nor agree,

sisted data recording and identify overcome them.

tions are that social unit in this study was confined to a single educational-treat-ment setting and one method of seizure tracking. The par-ticipants included 40 total respondents, a reasonable sample of stakeholders, but further inquiry with potentially larger groups is indicated. One additional qualification this study was larger groups is clearly of inflatine inquiry with potential concerns factors that may have contributed to the averaging facing (cetting effect) on every questionniare ite among the three participant groups. Of course, the results may have accurately reflected the options of able ratings that could have been occasioned by eithe articlicationships with the service setting or the inclusion of only positively worded items in the questionnaires? (Swain et al., 2008). Finally, and as acknowledged previously, the three participant groups were exposed to the seizure tracking system in different ways and their judges are the instances of the experiments about utility should and their judges of the experiments about utility should and their judges of the experiments about utility should be associated with seizure in children with ASD is necessary for health monitoring. The computer seizure of the precision of the precision of the precision of the seizure set of the seizure set of the seizure set of the set of the

by internal clinical computing specialists. It is possible that the unique functions of the system may not be rep-ticable or statianable in other settings unless similar resources are available, possibly leading to less-than desirable social validhe, possibly leading to less-than desirable social validhe, and the setting sub-desirable social validhe, and the setting sub-eration of the setting sub-tions of seizures, and what training approach is most effective with care providers? Apropos to our system of the setting sub-ensities of the setting sub-desirable the setting sub-ensities of setting sub-efficiency sub-ensities the setting sub-ensities of setting sub-ensities the setting sub-science trading sub-science trading sub-provision is warrated. An internet such as the Performance Diagnostic Checklist-Human Services **EI** (DC-HS, Wilder *et al.*, 2020) would be valuable in solating conditions which may delimit computer. with sectors of children with Got is necessary to health monitoring. The computer-assisted system described in this report is based on currently available technology and offers practitic their famil treatment planning. We found positive r system from multiple stakeholders at es a user-friendly methodology to sive study of applicability and operation that will r mote use within

Ethical approval

All procedures performed with participants in the study were in accordance with the ethical standards of the

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