



Medicine, Nursing and Health Sciences

The Brain Injury Driving Self-Awareness Measure (BIDSAM)

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The Brain Injury Driving Self-Awareness Measure (BIDSAM)

Background

The BIDSAM is a 28 item measure designed to assess awareness of on-road driving performance in adults undergoing a standardised on-road driving assessment following brain injury. It comprises two parallel forms: a self scale which is completed by the driver being assessed and a clinician scale which is completed by a qualified driving assessor responsible for conducting the assessment. Each form is divided into two sections. Section 1 (6 items) assesses the overall performance of the driver during the assessment while Section 2 (22 items) comprises statements that explore the frequency of difficulties or errors relating to specific driving skills assessed as part of a standard on-road assessment. These skills include adherence to road rules, speed control, signalling, lane position, lane changing, merging, observation, car control, low speed manoeuvres and the need for instructor intervention. Self-awareness of driving ability is conceptualised as the difference between the clinicians rating and the driver's self-rating and this represents an emergent or evaluative level of self-awareness.

For further information regarding the BIDSAM development and validation see Gooden, J. R., Ponsford, J., Charlton, J. L., Ross, P. E., Marshall, S., Gagnon, S., Bedard, M., & Stolwyk, R. J. (in press). The Development and Initial Validation of a New Tool to Measure Self-Awareness of Driving Ability after Brain Injury, *Australian Occupational Therapy Journal*.

Administration

The BIDSAM is designed to be completed immediately following an on-road driving assessment. The driver being assessed is provided the **BIDSAM-Self** form and asked to independently complete the questionnaire based on their performance during the assessment. At an appropriate time, the assessor responsible for evaluating the driver's performance is to complete the **BIDSAM-**

Clinician form using their notes and records from the assessment to assist them in their responses. **It is critically important to administer the BIDSAM-Self to drivers prior to giving feedback in order to gain an accurate representation of their perceived driving performance. Furthermore, the self and clinician forms should be completed independently with no discussion of scale responses between drivers and clinicians until they are all complete.** For ease of use, the BIDSAM has been designed to be printed as a booklet, allowing the BIDSAM-Self form to be pulled out and handed separately to drivers.

Scoring

Items are scored according the number in brackets. Items 1-6 are scored on a 5 point scale while items 7-28 are scored on a 3 point scale (**do not score item 29**). Items from the respective Self and Clinician forms are summed to obtain a total score for each scale. To calculate the awareness discrepancy, the Self total score is subtracted from the Clinician total score.

Interpretation

A high score on the BIDSAM-Self and BIDSAM-Clinician forms is indicative of worse driving performance as rated by the driver or clinician respectively. For the BIDSAM-Awareness Discrepancy, a score of zero indicates a perfect agreement between the driver's self-rating and the clinician. Larger values are indicative of a greater disagreement between drivers and clinicians. A large positive value indicates the driver has overestimated their driving abilities compared to the clinician and has thus demonstrated a lack of emergent awareness. The greater this score the more unaware the driver is of their abilities. A large negative value indicates the driver has underestimated their driving abilities.

BIDSAM – SELF

Name: _____

Date: _____

Section 1: Please read the following questions about your experience of the on-road driving assessment and circle your responses.

1 How well do you think you performed on the driving assessment today?

Very poor	Poor	Average	Good	Excellent
(5)	(4)	(3)	(2)	(1)

2 Having completed the assessment do you have any concerns about your driving?

Not concerned	A little concerned	Moderately concerned	Very concerned	Extremely concerned
(1)	(2)	(3)	(4)	(5)

3 How comfortable do you think your passengers were with your driving?

Very uncomfortable	Uncomfortable	Average	Comfortable	Very comfortable
(5)	(4)	(3)	(2)	(1)

4 To what degree do you think the driving assessment reflected your driving abilities?

Very poor reflection	Poor reflection	Average reflection	Good reflection	Very good reflection
(5)	(4)	(3)	(2)	(1)

5 How well were you able to maintain your concentration?

Very poor	Poor	Average	Good	Excellent
(5)	(4)	(3)	(2)	(1)

6 Did you become tired during the assessment and if so, to what extent?

None	Mild	Moderate	Considerably	Severe
(1)	(2)	(3)	(4)	(5)

Official Use OnlyTotal
Section 1

57

BIDSAM – SELF**Section 2**

Instructions: Please answer the following questions about the driving assessment today, circling the most appropriate response.

Answer **NO** if the event **did not** happen.

Answer **OCCASIONALLY** if the event happened **once or twice**.

Answer **FREQUENTLY** if the event happened **three or more times**.

		Circle Your Response		
		(0)	(1)	(2)
7	The instructor had to help me brake.	No	Occasionally	Frequently
8	The instructor had to help me steer the car.	No	Occasionally	Frequently
9	The instructor had to warn me about a hazard.	No	Occasionally	Frequently
10	I disobeyed a road sign.	No	Occasionally	Frequently
11	I didn't give way to other cars or pedestrians when I was required to.	No	Occasionally	Frequently
12	I exceeded the speed limit on local roads.	No	Occasionally	Frequently
13	I exceeded the speed limit on the freeway.	No	Occasionally	Frequently
14	I was traveling too quickly for some situations.	No	Occasionally	Frequently
15	I was traveling too slowly at some points on the local roads.	No	Occasionally	Frequently
16	I was traveling too slowly at some points on the freeway.	No	Occasionally	Frequently
17	I forgot to use my indicators correctly when turning or changing lanes.	No	Occasionally	Frequently

- | | | | |
|---|----|--------------|------------|
| 18 I didn't keep enough space between my car and other cars while driving. | No | Occasionally | Frequently |
| 19 I didn't keep my car correctly positioned in my lane. | No | Occasionally | Frequently |
| 20 I forgot to check my mirrors while driving. | No | Occasionally | Frequently |
| 21 I was not reacting quickly enough to changes in the traffic conditions ahead such as a change in traffic lights, upcoming intersection or slowing cars. | No | Occasionally | Frequently |
| 22 I forgot to perform head checks before changing lanes or merging. | No | Occasionally | Frequently |
| 23 I had difficulties with steering my car. | No | Occasionally | Frequently |
| 24 I had difficulties with accelerating smoothly. | No | Occasionally | Frequently |
| 25 I had difficulties with braking smoothly. | No | Occasionally | Frequently |
| 26 I had difficulties with changing lanes. | No | Occasionally | Frequently |
| 27 I had difficulties with parking my car. | No | Occasionally | Frequently |
| 28 I had difficulties with merging into traffic. | No | Occasionally | Frequently |

Official Use Only

Total
Section 2

S2

- | | | | | | |
|---|--------------------|------------------|--------------------|--------------|-------------------|
| 29 How sure are you of your answers above? | Not at all
sure | A little
sure | Moderately
sure | Very
sure | Extremely
sure |
|---|--------------------|------------------|--------------------|--------------|-------------------|

BIDSAM – CLINICIAN

Driver: _____

UR: _____

Assessor: _____

Date: _____

Section 1: Please read and answer the following questions about the drivers' performance on the driving assessment today.

1 How well do you think they performed on the driving assessment today?

Very poor	Poor	Average	Good	Excellent
(5)	(4)	(3)	(2)	(1)

2 Having completed the assessment do you have any concerns about their driving?

Not concerned	A little concerned	Moderately concerned	Very concerned	Extremely concerned
(1)	(2)	(3)	(4)	(5)

3 How comfortable were you as a passenger with their driving?

Very uncomfortable	Uncomfortable	Average	Comfortable	Very comfortable
(5)	(4)	(3)	(2)	(1)

4 To what degree do you think the driving assessment reflected their driving abilities?

Very poor reflection	Poor reflection	Average reflection	Good reflection	Very good reflection
(5)	(4)	(3)	(2)	(1)

5 How well were they able to maintain their concentration?

Very poor	Poor	Average	Good	Excellent
(5)	(4)	(3)	(2)	(1)

6 Did they become tired during the assessment and if so, to what extent?

None	Mild	Moderate	Considerably	Severe
(1)	(2)	(3)	(4)	(5)

Official Use OnlyTotal
Section 1

CI

BIDSAM – CLINICIAN**Section 2**

Instructions: Please answer the following questions about the driving assessment using your record of their on-road performance as a guide.

Circle **FREQUENTLY** if the event occurred three or more times.

Circle **OCCASIONALLY** if the event occurred once or twice.

Circle **NO** if the event did not happen.

	Circle Your Response		
	(0)	(1)	(2)
7 Did the instructor have to help them brake?	No	Occasionally	Frequently
8 Did the instructor have to help them steer?	No	Occasionally	Frequently
9 Did the instructor have to warn them about a hazard?	No	Occasionally	Frequently
10 Did they disobey a road sign?	No	Occasionally	Frequently
11 Did they fail to give way to other cars or pedestrians?	No	Occasionally	Frequently
12 Did they exceed the speed limit on local roads?	No	Occasionally	Frequently
13 Did they exceed the speed limit on the freeway?	No	Occasionally	Frequently
14 Were they travelling too quickly for some situations?	No	Occasionally	Frequently
15 Did they travel too slowly at any point on local roads?	No	Occasionally	Frequently
16 Did they travel too slowly at any point on the freeway?	No	Occasionally	Frequently
17 Did they fail to use their indicators correctly when turning or changing lanes?	No	Occasionally	Frequently
18 Did they fail to keep enough space between other cars?	No	Occasionally	Frequently

19 Did they fail to correctly position their car in their lane? No Occasionally Frequently

20 Did they forget to check their mirrors? No Occasionally Frequently

21 Were they failing to react quickly enough to changes in the traffic conditions ahead? No Occasionally Frequently

22 Did they fail to perform head checks before changing lanes or merging? No Occasionally Frequently

23 Were they having difficulty steering? No Occasionally Frequently

24 Were they having difficulty accelerating smoothly? No Occasionally Frequently

25 Were they having difficulty braking smoothly? No Occasionally Frequently

26 Were they having difficulty changing lanes? No Occasionally Frequently

27 Were they having difficulty parking their car? No Occasionally Frequently

28 Were they having difficulty merging into traffic? No Occasionally Frequently

Official Use Only
 Total Section 2

	Self	Clinician
Section 1	<input type="text" value="S1"/>	<input type="text" value="C1"/>
	+	+
Section 2	<input type="text" value="S2"/>	<input type="text" value="C2"/>
	=	=
Total Score	<input type="text" value="ST"/>	<input type="text" value="CT"/>

Awareness Discrepancy Calculation		
Clinician Total	Self Total	Awareness Discrepancy
<input type="text" value="CT"/>	– <input type="text" value="ST"/>	= <input type="text"/>

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