

UPDATED



Kingston Standardized Behavioural Assessment

**LONG TERM CARE Form
KSBA_{LTC}**

**MANUAL
(Administration &
Interpretation)**

The Kingston Scales and Manuals can be freely downloaded from:
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PURPOSE

The **Kingston Standardized Behavioural Assessment (KSBA)** provides a powerful behavioural analysis that is normally only available to behaviourally trained clinicians (e.g. psychologists, psychometrists, etc.). Since both the introduction of home support services, and the decision to place someone in long term care, as well as caregiver stress, are almost always triggered by behavioural, rather than cognitive issues, a behavioural analysis of the individual is of great importance and not something that can be gained easily from other sources. For individuals already residing in Long-Term Care facilities or other similar settings, the **KSBA_{LTC}** allows staff to assess and monitor the behavioural status of an individual and request further professional assessments or consultations.

Since progressive major neurocognitive disorders (dementias) such as Alzheimer's disease are characterized by behavioural as well as cognitive disturbances, the **Kingston Standardized Behavioural Assessment (KSBA)** was designed to complement cognitive assessment tools such as the **Kingston Standardized Cognitive Assessment - Revised +DRIVE Score (KSCAr^{+Drive})** or the **mini-Kingston Standardized Cognitive Assessment - Revised (mini-KSCAr)** by providing a measure of the behavioural impairment affecting such individuals. (See page 27 of this manual for references.)

There are two versions of the KSBA, the **KSBA_{comm}** for use with community dwelling individuals, and the **KSBA_{LTC}** (long term care form) for use in nursing homes, chronic hospitals, or other long term care facilities. **If you are using the community form, see the KSBA Community Manual** (available at our website www.kingstonscales.org). The examples and data in this manual refer to the KSBA long term care form. The **KSBA_{LTC}** is also available in French, thanks to translations by Dr. Véronique Parent, and in Chinese. (Translations into other languages are available for the KSBA and other Kingston scales at our website www.kingstonscales.org.)

While the KSBA was originally designed to measure behaviours related to Major Neurocognitive Disorders such as Alzheimer's Disease, we have found the KSBA effective in detecting behaviour change in depression (see Hopkins, RW, David, MM, Kilik, LA. (2014)). From our clinical experience with other disorders, we suspect that the **KSBA would be effective in detecting behaviour change in a wide variety of neurological conditions.**

Another use of the **KSBA_{LTC}** may be in looking at cognitive load for a hospital or LTC unit, as a whole, to assist in making staffing decisions.

UPDATE

UPDATED ANALYSIS FORM

It should be noted that the Analysis page which is page 3 of the 4 page KSBA form, has been redesigned, providing an **expanded analysis of the “neuropsychiatric” and “neuropsychological”** behaviours (see below, page 6). **The original scale was not in anyway altered.** This was first introduced in Aug of 2021; earlier forms have the original format. The version date may be found at the very bottom right hand corner of the KSBA_{LTC} form (last page). Latest versions can be downloaded free of charge from www.kingstonscales.org (or www.kingstonscales.ca).

THE LONG TERM CARE FORM - KSBA_{LTC}

As behavioural problems often significantly increase the amount of nursing care that an individual requires, a measure of behavioural disturbance is a very useful type of information for long term care, or other nursing care facilities. The LTC form differs from the community form in that 25 new items have been added, while 19 items were removed from the original scale, yielding a total of 74 items for the KSBA_{LTC}. The removed items were ones that were unlikely to be relevant to a person in a long term care facility (e.g. “Shows poor judgement about driving”; “Is unable to perform usual household tasks”). The new items are ones that are much more likely to be seen in long term care residents (e.g. “Resistant to bathing”; “Repeatedly rearranges furniture”). The KSBA_{LTC} is therefore better able to capture the essence of the behavioural disturbances seen in long term care patients. Below is a list of items that were removed or added to the community form to create the long term care form.

When administrating and interpreting of the KSBA_(LTC), as with the KSBA_(comm), the person who knows the patient best is the rater - in this case, it is a staff member (or members) instead of a family member.

Prior to the creation of the KSBA_(LTC), the KSBA_(comm) was sometimes used in long term care facilities, therefore an “INST” column was added to the Analysis page of the original KSBA_(comm) to aid in the interpretation of data from individuals living in LTC facilities (i.e. institutional). It should be noted that using the “INST” (short for “institution”) scale on the old Community form is not the equivalent of using the KSBA_{LTC}. The KSBA_(comm) and the KSBA_{LTC} are two separate (although very closely related) scales; each designed for slightly different purposes. In general, **when one is assessing an individual who lives in the community, the KSBA_(comm) should be used; but when assessing an individual in a long term care facility, the KSBA_{LTC} should be used.** However, if one is assessing an individual who has just recently been admitted to a long term care facility or retirement home, from the community, the community form would best apply at first.

ITEMS REMOVED FROM AND ADDED TO THE KSBA_(comm) TO CREATE THE KSBA_{LTC}

Item #	Items REMOVED from the KSBA _(comm)	Item #	NEW Items ADDED to the KSBA _{LTC}
2	Reduced personal hygiene...	2	Resistant to bathing.
3	If left on his/her own, doesn't eat properly.	3	Refuses to leave own room.
4	Unsafe in daily activities, if left unsupervised.	5	Does not like being touched.
6	Unable to handle personal finances.	6	Combines foods not usually eaten...
7	Is unable to perform usual household tasks.	7	Refuses to eat.
8	Gets confused in places other than home.	8	Drools on self, clothing.
10	Trouble appreciating subtleties in conversations...	10	Eats other's food at meal time.
20	Has difficulty organizing his/her time...	18	Smears faeces.
21	Forgets activities, conversations of only a...	21	Easily distracted by surrounding noises.
22	Forgets important everyday information.	22	Places things in inappropriate places.
39	Shows poor judgement in social situations.	27	Expresses suicidal feelings, threatens...
40	Shows poor judgement about driving.	30	Throws things at, or pinches others.
41	Shows uncharacteristic change in his or her...	36	Sees or hears things that are not there.
42	Poor choices in dressing.	37	Talks to pictures or mirrors.
44	Shows less self control than usual.	43	Seeks constant attention.
59	Has trouble dressing, especially with buttons...	44	Eats non-food items.
61	Reads far less frequently than previously.	45	Grabs others nearby.
63	Does not watch or follow television.	46	Shows increased sexual drive, interest.
68	Does not produce meaningful speech.	48	Accident prone, gets hurt a lot.
		50	Invades personal space.
		53	Talks about same topic over and over...
		55	Clapping/noise making.
		59	Repeatedly rearranges furniture.
		60	Bangs head deliberately.
		74	Speaks in meaningless phrases, or...

NEUROPSYCHIATRIC VS. NEUROPSYCHOLOGICAL BEHAVIOURS

Traditional behaviour scales used for Major Neurocognitive Disorders have practically all concentrated on what has become known as the “behavioural and psychological symptoms of dementia” (or BPSD), or often referred to as “neuropsychiatric” behaviours. These behaviours are ones that typically encompass behaviours related to emotions, aggression, and psychotic disorders (such as paranoia), problems with judgement, or delusions and hallucinations/misperceptions.

Factor analysis has shown that the KSBA items fall into two groups, or factors. The first factor included the domains of Emotional, Aggressive, and Paranoid behaviour, Misperceptions, Judgement, Perseveration, and Motor Restlessness. These represent the traditional BPSD or “neuropsychiatric” behaviours. The second factor included Daily Activities, Attention/ Concentration/Memory, Sleep, Motor/Spatial and Language difficulties. We have termed this constellation of nontraditional, more functionally and environmentally based behaviours as the “neuropsychological” factor. Therefore, **the KSBA provides a broader and more realistic portrait of dementia than other scales**, by providing a measure of both “neuropsychiatric” (NPT) and “neuropsychological” (NPL) behaviours.

It should be noted that while **NPT symptoms can often be treated by pharmacologic** means, **NPL behaviours** are usually resistant, or only partly responsive to, traditional psychiatric medications and need to be treated with **behavioural or environmental manipulations**.

RATER SECTION

The rater is usually a staff member(s), who knows the patient on a day-to-day basis best. In some cases, assessment may have to be a collaborative effort among several staff members.

The KSBA_{LTC} form consists of two parts, the rater section (first 2 pages), which is a list of 74 commonly observed dementia related behaviours. **The behaviours are described in plain English with an attempt to avoid jargon that might be unfamiliar or confusing.** Beside each behaviour is a checkoff box for the rater to place a checkmark, if the behaviour applies. One should check off only those behaviours that represent a CHANGE from what has been typical behaviour across adulthood. The behaviours are broken into groups that consist of related behaviours. These groups are referred to as “domains”. It should be noted the neuropsychiatric domains are slightly shaded, both in the rater section and analysis pages.

The last 2 pages are for behaviour analysis. **Page 3, the Analysis page, allows a clinician to analyse and summarize the reported behaviours.** Page 4 is the **Behaviour Analysis Procedures Guide** page, which is a brief set of instructions on how to complete the Analysis page. See Examples, starting on page 17.

It should also be noted that unlike many other scales, **no information on severity or frequency** is required. This information is often handled poorly, and consequently is often no more than a source of error. See Hopkins et al. 2006, for further data and discussion on this aspect of the scale.

MONITORING BEHAVIOUR CHANGE BY REPEATED ADMINISTRATIONS

The KSBA_{LTC} can be used as a powerful tool to monitor behaviour changes over time; therefore subsequent administrations can assess changes in the “last month” or other time period, e.g. 1 week, 2 days, 6 months, etc. The KSBA_{LTC} can be used to capture a current snapshot of an individual’s behaviour. Typically, “current” has been taken to mean behaviours that have occurred in the last month. However, the KSBA_{LTC} can also be used to track behaviour change over time including change attributable to specific interventions. In such cases the KSBA_{LTC} may be administered repeatedly, and the interval may also be shorter than one month. When doing so, the reporting interval should match the repetition interval. For example, if you give it once a week to a patient, then only ask for behaviours that have been noted in that past week. The chosen interval should be clearly stated in any clinical reports.

GLOSSARY

To aid in the explanation of the behaviours to the rater, a **glossary** providing a more detailed description of the behaviours on the KSBA_{LTC}, is found near the end of this manual (page 24).

ADMINISTRATION INSTRUCTIONS

The instructions are: "Please check all of the following behaviours that have occurred in the last month or are presently occurring, and that are a change from the person's earlier behaviour (prior to illness). Indicate those items that apply by marking the box beside the appropriate statement. The Total Score equals the number of boxes checked." Only items that apply should be checked.

It should be noted that while many behaviours are discrete acts (like biting or hitting people), that can be easily identified in both time and place, other behaviours like "no longer uses some common objects properly" or "No longer takes part in favourite pastimes" are ongoing. Often, once an individual is deemed incompetent to perform a task or is shown to be a risk for some behaviour, he or she is not given another chance to demonstrate his or her incompetence, but rather is kept away from such activities or closely supervised while performing them. These ongoing behaviours **are checked**, as it is assumed that once one is unable to perform a task, the individual will continue to be unable. **This only pertains to progressive dementias** or disorders where no significant improvement is expected.

BEHAVIOUR ANALYSIS

TOTAL SCORE ANALYSIS

The **Total Score Analysis** refers to a group of 9 columns marked “**Total Score Analysis**” (on page 3 of the KSBA_{LTC} form, or see following figure). To interpret a **Total score**, take the Total Score from the bottom of page 2 of the KSBA form, and circle it in the **first** column on the far left. If it is a score above 30, it may not appear in the column. In that case just mark closest position to it. Then read the Cumulative Percent in next column over (i.e. the second column from the left). Then read the “**score description**” in next column over (i.e. the third column from the left). This procedure is repeated for the “neuropsychological” (**NPL**) and “neuropsychiatric” (**NPT**) behaviours (the middle 3 columns for the **NPL**, and the next 3 columns (i.e. the 3 columns on the right) for the **NPT**).

The “**Cumulative Percent**” column indicates the percentage of scores at or below that score. The cumulative percentage indicates where a score falls in a distribution. They are used when the distribution is **not** mathematically normal or bell-shaped.

The “**Score Description**” column provides a “thermometer” style description for scores in that range. The scores are described as being “**LOW**”, “**MEDIUM**”, “**HIGH**”, or “**VERY HIGH**”. It should be noted that the KSBA_{LTC} also has a lower range marked with “**”. Scores in this (**) range may represent random error, and may not be clinically relevant.

It must be remembered that these descriptions are somewhat arbitrary; partly based on our obtained data, but also on our clinical expectations of what we would consider a “Low” or “High” score. Obviously, these expectations are going to vary according to clinical setting. The average score in a long term care advanced dementia ward (using the KSBA_{LTC}) is going to be higher than that in a “first contact” ambulatory outpatient clinic (using the KSBA_(comm)). **It must also be remembered that these descriptive ranges are merely labels placed on a continuum, and that there are no “true” demarcation points.**

What caregivers, lay or professional, can handle will vary between individuals and institutions. It must also be noted, that there are differences between individual patients. Even if a patient scores only a few points, yet one of the behaviours is related to violent physical outbursts, there might be need for extra care and support. Even a Total score in the 20's or lower, might indicate that additional services or supports are required. High-scoring institutional-living patients might well benefit from a specialist consult or other intervention.

KSBA_{LTC} TOTAL SCORE ANALYSIS CHART

Total		NPL		NPT	
Total Score	Cumulative Percent	NPL Score	Cumulative Percent	NPT Score	Cumulative Percent
74		36		38	
70					
65				37	
60		35		36	
55		34		35	
50		33		34	
46	99	32		33	
42	98	31		32	
38	96	30		31	
34	93	29		30	
30	88	28		29	
29	84	27		28	
28	83	25		27	
27	80	25		26	
26	77	24		25	
25	75	23	99	24	
24	73	22	98	23	
23	68	21	98	22	99
22	63	20	97	21	98
21	59	19	94	20	
20	52	18	90	19	97
19	46	17	85	18	96
18	42	16	82	17	95
17	36	15	78	16	94
16	32	14	70	15	93
15	30	13	66	14	90
14	27	12	62	13	86
13	23	11	55	12	83
12	19	10	47	11	76
11	16	9	39	10	68
10	13	8	33	9	64
9	10	7	26	8	53
8	8	6	19	7	47
7	7	5	14	6	38
6	6	4	11	5	36
5	5	3	7	4	29
4	3			3	15
3	2			2	11
2	1			1	6
1				0	3
0					

BEHAVIOUR ANALYSIS

BEHAVIOUR PROFILE

The large chart on the right side of the Behaviour Analysis page is the Behaviour Profile which provides a column for each of the 12 domains (see example page 12). For each column the number of possible behaviours in that domain is displayed, starting with 0 (zero) at the bottom and going up to the maximum number of behaviours in that domain, at the top. To fill out the profile, simply go to the informant pages and add up the number of ticked items for each domain, and put that value in the domain total box at the end of each behavioural grouping. Then transfer these values to the profile chart. If desired, these points can be joined up with a line to help create a visual profile. See Examples on pages 16 to 23. The profile is also useful in identifying specific behaviours to target for intervention.

On the extreme left side of the Profile chart is a “Comparison Scale” column that is used to give each of the other column scores a relative standardized value, allowing all domains to be compared to each other. For example, if the score on Judgement/Insight equals 4 and on Misperceptions, the score equals 3, then both can be said to have a relative score of $\frac{4}{3} = 1.33$. In this way, relative comparisons (i.e. degree of impairment or sparing) across the 12 domains can be made.

The domains on the KSBA_{LTC} are arranged in an order that makes interpretation meaningful. The first 2 (Daily Activities and Attention/Concentration/Memory) and the last 3 (Sleep, Motor Spatial and Language) are located at the beginning and end of the scale respectively, to facilitate informant interviewing, and create distinct profiles to assist clinicians. These neuropsychological domains (NPL) are behaviours that are not always measured in more traditional BPSD scales. Yet these five domains account for nearly 90% of the endorsed behaviours in the earliest stages of dementia in our normative sample, and represent meaningful behavioural change at any point in the progression of the disease process. In contrast, rates of neuropsychological and neuropsychiatric behaviours approach parity late in the disorder.

For instance in Example 1 (page 19), a case of Alzheimer’s disease with relatively few behaviour changes, most of the scores appear in the neuropsychological behaviours (i.e. the outer groups) producing a U-shaped profile. Also, the ratio of NPL to NPT behaviours is 11 to 2 (i.e. 5.5). In Example 2 (page 20), a much more advanced case with a score of 39, the ratio is only 1.67:1.

KSBA_{LTC} BEHAVIOUR PROFILE CHART

	1	2	3	4	5	6	7	8	9	10	11	12
COMPARISON SCALE	Daily Activities	Attention/Concentration/Memory	Emotional Behaviour	Aggressive Behaviour	Misperceptions/Misidentifications	Paranoid Behaviour	Judgement/Insight	Perseveration	Motor Restlessness	Sleep/Activity/Sundowning	Motor/Spatial Problems	Language Difficulties
	10	18	4	5	4	6	5	8	5	5	4	4
9.5	17											
9	16											
8.5	15				5		7					5
8	14		4			4		4	4			
7.5	13	3		3			6			3	3	
7	12											
6.5	11				4							4
6	10		3			3	5	3	3			
5.5	9											
5	8	2		2	3		4			2	2	3
4.5	7											
4	6		2			2	3	2	2			
3.5	5											
3	4				2							2
2.5	3	1		1			2			1	1	
2	3		1			1		1	1			
1.5	2				1		1					1
1	1											
0.5	1											
0	0	0	0	0	0	0	0	0	0	0	0	0

SCORE ANALYSIS

The “updated” KSBA_{LTC} Analysis page allows one to first compare the Total score to scores obtained by individuals who were referred to a specialized hospital dementia unit, then examine the NPL and NPT scores in a similar manner. While the Total score gives a measure of overall impairment (advancement of the disorder), the NPL and NPT scores allow one to explore the Total score in greater detail. The NPL and NPT scores provide an indication of the factor makeup of the Total score. We have found that some disorders such as uncomplicated Alzheimer’s disease initially show almost only NPL behaviours, while other disorders such as Frontal Temporal Dementia, show many NPT behaviours as well. The domain profile can provide insight into the types of behaviours that confront caregivers. While having to deal with issues related to memory and concentration loss can be difficult, dealing with paranoia, for example, raises a host of new challenges.

After having assessed the Total, NPL, and NPT scores, one can assess the results further by looking at the domain Profile. If the behaviours are almost all NPL, then they will appear roughly as an “U” shaped pattern on the Profile chart (see pages 19 & 21). If a number of NPT behaviours are present, then the 7 NPT columns will fill in the middle, resulting in profiles that look somewhat uneven like a “W”, or a variant thereof (see pages 20 & 22). Therefore, profiles tend to reflect NPL/NPT behaviour distributions.

An obvious question that arises is: is there any clinical significance to these profiles. Can useful information be predicted from them? We believe that the answer is yes; and we have found evidence to support differences in diagnoses, and associated caregiver stress. We have observed that patients with high NPT scores are more stressful to care for than those with primarily NPL scores. In Kilik LA, & Hopkins RW. (2019) it is reported that the correlation between the Kingston Caregiver Stress Scale (KCSS) and the KSBA_(comm) (Total score) is 0.80 (Spearman’s rho), suggesting that stress levels track very closely with behaviour changes. We have also found that caregivers of patients, showing almost only NPL behaviours (U profiles), report significantly lower stress levels than those of patients with large numbers of NPT behaviours (W profiles) (KCSS mean = 15.56 (U’s) vs. mean = 22.09 (W’s) $p < 0.000$). This remains an area of active research.

KSBA_{LTC} STATISTICS AND PERCENTAGE *

KSBA_{LTC} STATISTICS

LONG TERM CARE FORM (KSBA _{LTC})				
N = 175	Males = 126		Females = 49	
	Mean	sd	Min	Max
Age	76.74	8.85	55	97
Daily Activities	5.87	2.47	0	13
Atten/Conc/Mem	1.67	1.35	0	4
Emotional	1.15	1.05	0	5
Aggressive	1.79	1.46	0	4
Misperceptions	0.91	1.01	0	4
Paranoid	0.66	1.04	0	5
Judgement	2.06	1.69	0	8
Perseveration	0.8	1.4	0	5
Motor Rest	1.03	1.19	0	4
Sleep	1.31	1.06	0	4
Motor Spatial	1.64	1.26	0	4
Language	1.76	1.7	0	6
NPL Total	12.25	5.24	1	26
NPT Total	8.35	4.85	0	25
TOTAL SCORE	20.59	8.83	1	47

Neuropsychological Behaviours (NPL) [blue]

Neuropsychiatric Behaviours (NPT) [red]

* These statistics are drawn from a sample of patients admitted to a geriatric psychiatry assessment ward. All were suffering from Major Neurocognitive Disorder (mostly Alzheimer's disease).

LONG TERM CARE FORM - KSBA_{LTC}
CUMULATIVE PERCENT (n = 175)

Total Score	%	Neuropsychiatric Score	%	Neuropsychological Score	%
1	1.7	0	2.8	0	0
2	1.7	1	6.2	1	1.1
3	2.3	2	10.7	2	2.3
4	2.8	3	14.7	3	5.7
5	4.5	4	29.4	4	7.4
6	6.2	5	35.6	5	10.9
7	7.3	6	37.9	6	14.3
8	7.9	7	46.9	7	19.4
9	10.2	8	53.1	8	25.7
10	13.0	9	63.8	9	33.1
11	16.4	10	67.8	10	38.9
12	19.2	11	76.3	11	47.4
13	23.2	12	80.8	12	55.4
14	26.6	13	86.4	13	61.7
15	30.5	14	89.8	14	66.3
16	32.2	15	93.2	15	69.7
17	35.6	16	94.4	16	78.3
18	42.4	17	94.9	17	82.3
19	46.3	18	96.6	18	85.1
20	52.0	19	97.2	19	90.3
21	58.8	20	97.2	20	93.7
22	62.7	21	97.7	21	96.6
23	68.4	22	98.3	22	97.7
24	72.9	23	98.9	23	98.3
25	74.6	24	98.9	24	99.4
26	77.4	25	98.9	25	99.4
27	79.7	26	99.4	26	100
28	82.5	27	100		
29	83.6				
30	87.6				
31	90.4				
32	92.1				
33	92.7				
34	92.7				
35	93.8				
36	95.5				
37	95.5				
38	95.5				
39	96.0				
40	96.0				
41	96.0				
42	97.7				
43	97.7				
44	98.3				
45	98.3				
46	98.3				
47	99.4				
48	100				

RESEARCH

Currently, there are a number of ongoing research projects with the KSBA (in a variety of settings). These projects explore the statistical properties of the scale, along with a number of clinical applications. The KSBA_(comm) is being, and has been (see references), used to explore the behavioural dimensions of Alzheimer's disease, and other neurological conditions. Some of the studies are looking at the relationship between the KSBA_(comm) and other Kingston Scales, such as the Kingston Caregiver Stress Scale (KCSS). A list of the Kingston scales is found on page 27. If you are interested in participating in these, or other projects, or contributing data, please contact the authors at ksscales@queensu.ca.

EXAMPLES

On the next 6 pages are some samples taken from actual cases. Example 1 is an example of a complete scale, while examples 2 to 4 show only the Analyses pages for those cases. Example 1 has a relatively low to moderate number of responses (i.e. 13) noted as "Low" on the score description column, while Example 2 is an individual at a more advanced stage of dementia with a much larger number of responses (i.e. 39) noted as "Very High" on the score description column. Due to space limitations on the Analysis page, some numbers are skipped in the "Total Score" column. (See Example 2).

Examples 3 and 4 are individuals who both obtained the same Total score (i.e. 15) but have distinctly different profiles. The "U shaped" profile found in Example 3 (also in 1) is typical of Major Neurocognitive Disorder cases with relatively few behaviour symptoms, but are dominated by neuropsychological rather than neuropsychiatric behaviours. Whereas, Example 4 (also Example 2) has a more "W" shaped profile, consisting of nearly as many neuropsychiatric as neuropsychological behaviours. These distinct profiles may have clinical significance.

Kingston Standardized Behavioural Assessment

Long Term Care Form¹ - KSBA_{LTC}

Patient Name Example 1 Case #: _____

Sex: M F Age: 78 Education: _____ Years of Illness: _____

Date: _____ Rater/Informant: Daughter

Lives in: Facility Type: LTC



1 Daily Activities

<input checked="" type="checkbox"/>	1 No longer takes part in favourite pastimes (or greatly reduced).
<input type="checkbox"/>	2 Resistant to bathing.
<input type="checkbox"/>	3 Refuses to leave own room.
<input checked="" type="checkbox"/>	4 No longer uses some common objects properly (e.g. silverware).
<input type="checkbox"/>	5 Does not like being touched.
<input type="checkbox"/>	6 Combines foods not usually eaten together.
<input type="checkbox"/>	7 Refuses to eat.
<input type="checkbox"/>	8 Drools on self, clothing.
<input type="checkbox"/>	9 Overly dependent, wants more guidance than usual.
<input type="checkbox"/>	10 Eats other's food at meal time.
<input checked="" type="checkbox"/>	11 Difficulty judging the passing of time.
<input type="checkbox"/>	12 Wanders aimlessly.
<input type="checkbox"/>	13 Hides things.
<input type="checkbox"/>	14 Hoards objects.
<input type="checkbox"/>	15 Fails to recognize family or friends.
<input type="checkbox"/>	16 Incontinence of urine/faeces in clothes in daytime.
<input type="checkbox"/>	17 Voids in non-toilet areas.
<input type="checkbox"/>	18 Smears faeces.
3	< Total Daily Activities

2 Attention/Concentration/Memory

<input type="checkbox"/>	19 Can't concentrate, pay attention for long.
<input type="checkbox"/>	20 Misplaces things more than usual.
<input checked="" type="checkbox"/>	21 Easily distracted by surrounding noises.

22 Places things in inappropriate places.

1 < **Total Attention/Concentration/Memory**

3 Emotional Behaviour

23 Shows little or no emotion.

24 Mood changes for no apparent reason.

25 Expresses inappropriate emotions, either type or intensity.

26 Makes uncharacteristically pessimistic statements.

27 Expresses suicidal feelings, threatens to hurt him/herself.

0 < **Total Emotional Behaviour**

4 Aggressive Behaviour

28 Verbally abusive at times.

29 Uncharacteristically excitable, easy to upset; reacts catastrophically.

30 Throws things at, or pinches others.

31 Attempts to hit/strike out at others.

0 < **Total Aggressive Behaviour**

5 Misperceptions/Misidentifications

32 Claims an object/possession looks similar to, but is not the real one.

33 Claims a family member looks similar but is

34 Thinks present dwelling is not their place of

35 Thinks people are present who aren't.

36 Sees or hears things that are not there.

37 Talks to pictures or mirrors.

0 < **Total Misperception Behaviour**

	6 Paranoid Behaviour
	38 Suspicious of family and staff.
	39 Suspicious about money issues.
	40 Accuses others of stealing his or her things.
	41 Accuses spouse of infidelity.
	42 Expresses suspicion around taking medication.
0	< Total Paranoid Behaviour

	10 Sleep/Activity/Sundowning
X	61 Falls asleep at uncharacteristic times.
X	62 Gets up and wanders or awakens frequently at night, more than usual.
X	63 Sleeps more.
	64 Behaviour more agitated or impaired in late afternoon.
3	< Total Sleep/Activity/Sundowning

	7 Judgement/Insight
X	43 Seeks constant attention.
	44 Eats non-food items.
	45 Grabs others nearby.
	46 Shows increased sexual drive, interest.
	47 Makes inappropriate sexual advances.
	48 Accident prone, gets hurt a lot.
	49 Unconcerned about personal safety.
	50 Invades personal space.
1	< Total Judgement/Insight

	11 Motor/Spatial Problems
X	65 Poor coordination seen in limb/finger movements.
X	66 Slowness of movement.
X	67 Unsteadiness when walking.
	68 Difficulty judging object sizes or how near an object is from themselves.
3	< Total Motor Spatial Problems

	8 Perseveration
	51 Repeats same actions over and over.
	52 Repeats same words or phrases.
	53 Talks about same topic over and over again.
	54 Repeatedly shouts or calls out.
	55 Clapping/noise making.
0	< Total Perseveration

	12 Language Difficulties
X	69 Substitutes some words for others.
	70 Does not speak unless spoken to. (e.g. Does not participate in conversations.)
	71 Often cannot find the right word.
	72 Trouble pronouncing words.
	73 Does not understand simple commands, explanations.
	74 Speaks in meaningless phrases, or unintelligible language.
1	< Total Language Difficulties

	9 Motor Restlessness
	56 Desire to pace or walk almost constantly.
X	57 Can't sit still, restless, fidgety.
	58 Tries doors, windows.
	59 Repeatedly rearranges furniture.
	60 Bangs head deliberately.
1	< Total Motor Restlessness

11	Neuropsychological (NPL) Behaviours
2	Neuropsychiatric (NPT) Behaviours Total (3-9)

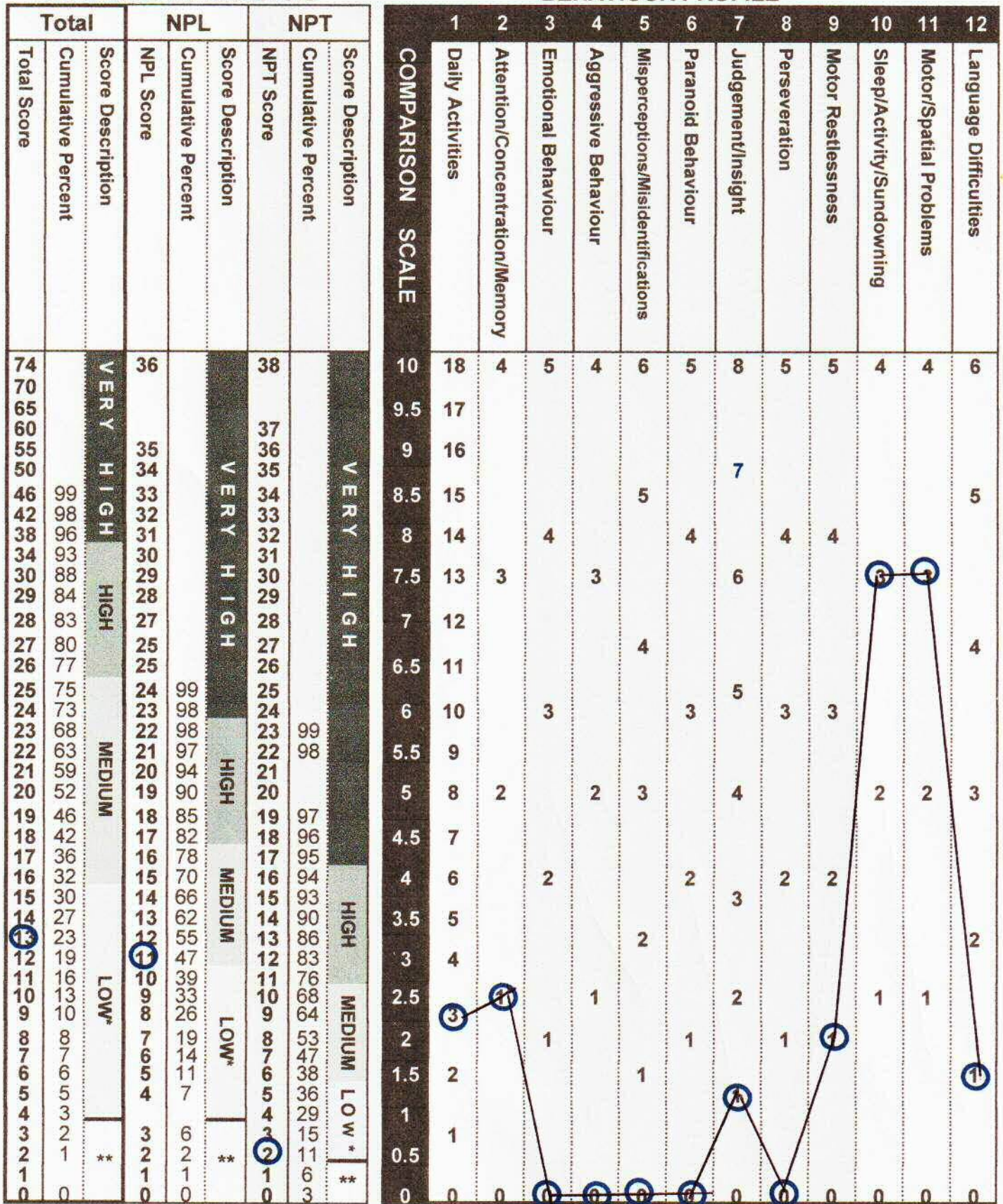
13	Total Score (1-12)²
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Example 1 - Early Alzheimer's Disease

KSBA_(LTC) - BEHAVIOURAL ANALYSIS FORM

TOTAL SCORE ANALYSIS

BEHAVIOUR PROFILE

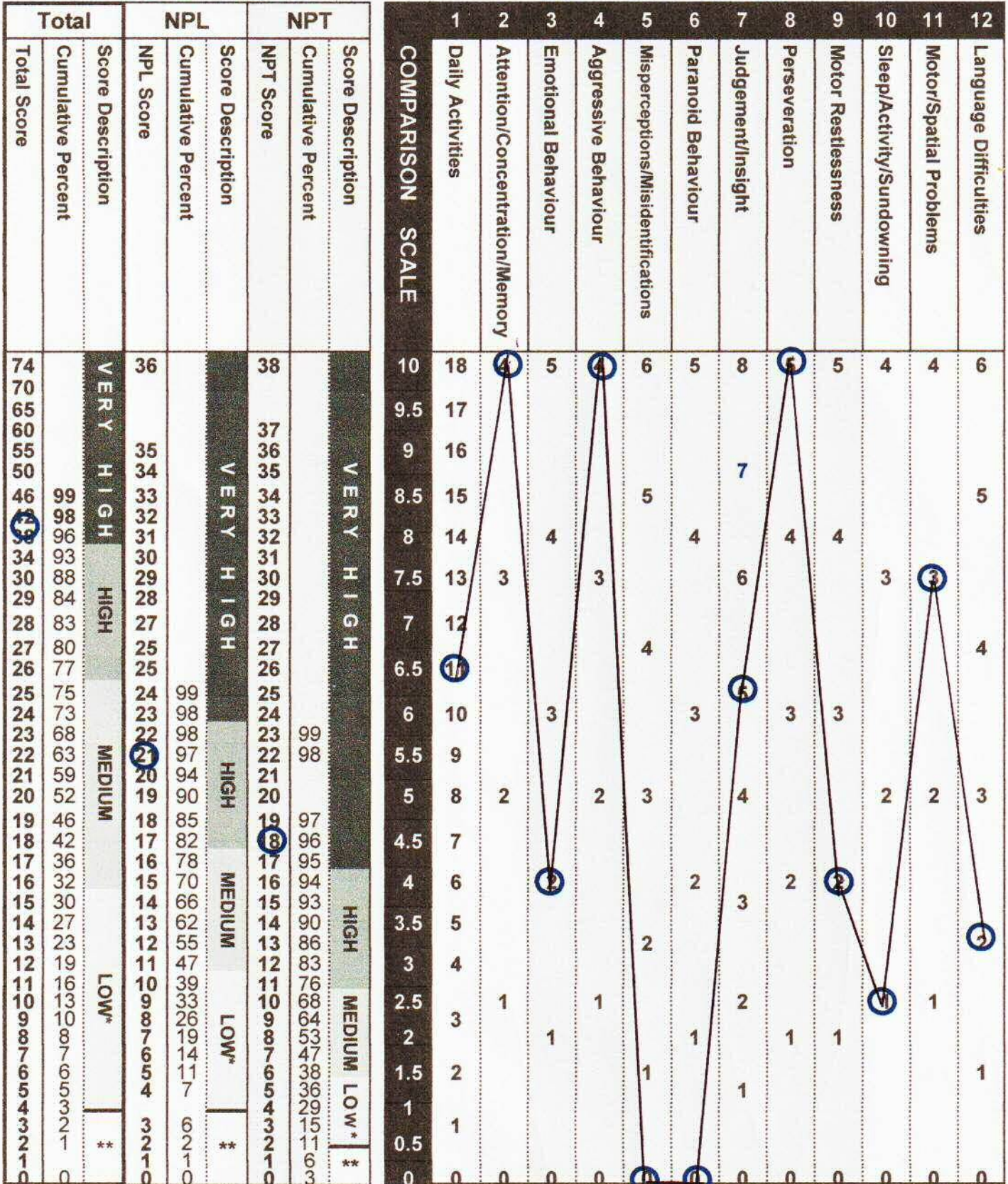


Example 2- Later Alzheimer's Disease

KSBA_(LTC) - BEHAVIOURAL ANALYSIS FORM

TOTAL SCORE ANALYSIS

BEHAVIOUR PROFILE



Example 3 - "U" Shaped Profile (Score=15)

KSBA_(LTC) - BEHAVIOURAL ANALYSIS FORM

TOTAL SCORE ANALYSIS

BEHAVIOUR PROFILE

TOTAL SCORE ANALYSIS			BEHAVIOUR PROFILE													
Total	NPL		NPT		COMPARISON SCALE											
Score Description	Score Description	Cumulative Percent	Score Description	Cumulative Percent	1	2	3	4	5	6	7	8	9	10	11	12
74	36		38		10	18	4	5	4	6	5	8	5	5	4	6
70					9.5	17										
65					9	16										
60					8.5	15				5						
55	35		37		8	14	4			4		4	4			5
50	34		36		7.5	13	3	3				6			3	3
46	33		35		7	12										
42	32		34		6.5	11			4							
38	31		33		6	10	3		3		5	3	3			
34	30		32		5.5	9										
30	29		31		5	8		2	3		4			2	2	3
29	28		30		4.5	7										
28	27		29		4	6	2									
27	25		28		3.5	5										
26	25		27		3	4										
25	24	99	26		2.5	3										
24	23	98	25		2	2										
23	22	98	24		1.5	1										
22	21	97	23	99	1											
21	20	94	22	98	0.5											
20	19	90	21		0											
19	18	85	20													
18	17	82	19	97												
17	16	78	18	96												
16	15	70	17	95												
15	14	66	16	94												
14	13	62	15	93												
13	12	55	14	90												
12	11	47	13	86												
11	10	39	12	83												
10	9	33	11	76												
9	8	26	10	68												
8	7	19	9	64												
7	6	14	8	53												
6	5	11	7	47												
5	4	7	6	38												
4	3	4	5	36												
3	2	1	4	29												
2	1	*	3	15												
1	0		2	11												
0	0		1	6												
			0	3												

Example 4 - "W" Shaped Profile (Score=15)

KSBA_(LTC) - BEHAVIOURAL ANALYSIS FORM

TOTAL SCORE ANALYSIS

BEHAVIOUR PROFILE

TOTAL SCORE ANALYSIS			BEHAVIOUR PROFILE														
Total	NPL		NPT		COMPARISON SCALE												
Score Description	Score	Cumulative Percent	Score Description	Score	1	2	3	4	5	6	7	8	9	10	11	12	
74	36		38		10	18	4	5	4	6	5	8	5	5	4	4	6
70					9.5	17											
65					9	16						7					
60			37		8.5	15				5							5
55	35		36		8	14		4		4		4	4				
50	34		35		7.5	13	3		3			6		3	3		
46	33		34		7	12											
42	32		33		6.5	11				4							4
38	31		32		6	10						5	3	3			
34	30		31		5.5	9											
30	29		30		5	8	2		2	3		4		2	2	3	
29	28		29		4.5	7											
28	27		28		4	6		2									
27	25		27		4	5											
26	25		26		3.5	4											
25	24	99	25		3	3											
24	23	98	24		3	2											
23	22	98	23	99	2.5	1											
22	21	97	22	98	2												
21	20	94	21		1.5												
20	19	90	20		1												
19	18	85	19	97	0.5												
18	17	82	18	96	0												
17	16	78	17	95													
16	15	70	16	94													
15	14	66	15	93													
14	13	62	14	90													
13	12	55	13	86													
12	11	47	12	83													
11	10	39	11	76													
10	9	33	10	68													
9	8	26	9	64													
8	7	19	8	53													
7	6	14	7	47													
6	5	11	6	38													
5	4	7	5	36													
4	3		4	29													
3	2		3	15													
2	1		2	11													
1	0		1	6													
0	0		0	3													

GLOSSARY

Further Description of Behaviours

1 Daily Activities

- 1 - No longer takes part in favourite pastimes (or greatly reduced).
 - no longer participates in hobbies or previously preferred activities like playing the piano, or card games
 - reduction in self-directed leisure activities
- 2 - Resistant to bathing - *refuses to bath, or requires substantial persuasion to do so*
- 3 - Refuses to leave own room.
- 4 - No longer uses some common objects properly.
 - *now seems to have difficulty handling common household objects such as telephones, microwaves, etc.*
 - *difficulty with kitchen utensils - knowing what to use*
- 5 - Does not like being touched.
- 6 - Combines foods not usually eaten together.
- 7 - Refuses to eat.
 - *or requires considerable effort on part of staff to do so*
- 8 - Drools on self, clothing 9 - Overly dependent, wants more guidance than usual.
 - *asks for more help, or approval from caregiver than in past; relies on caregiver to initiate activities*
 - *often described as "shadowing"*
- 9 - Overly dependent, wants more guidance than usual.
 - *asks for more help, or approval from caregiver than in past; relies on caregiver to initiate activities*
 - *often described as "shadowing"*
- 10 - Eats other's food at meal time.
 - *eats food from other people's trays, etc.*
- 11 - Difficulty judging the passing of time.
 - *may keep asking time of day, etc.*
 - *may prepare for appointments etc., several hours before necessary*
- 12 - Wanders aimlessly.
 - *walks around looking lost*
 - *not rapid pacing as in Motor Restlessness*
- 13 - Hides things.
 - *hides things away that do not need to be hidden, e.g. dentures*
 - *stores things in inappropriate places such putting a purse or wallet in freezer*
- 14 - Hoards objects.
 - *more extreme version of hiding; collecting excessive quantity of things*
- 15 - Fails to recognize family or friends.
 - *does not know them or thinks they are someone else*
- 16 - Incontinence of urine/faeces in clothes in daytime.
 - *clothes include "Depends" etc.*
- 17 - Voids in non-toilet areas.
 - *plant pots, hall corners, etc.*
 - *not the same as incontinence in clothes or incontinence briefs*
- 18 - Smears faeces.

2 Attention/Concentration/Memory

- 19 - Can't concentrate, pay attention for as long as they used to.
 - *attention span reduced, thinking is more muddled, often slower*
- 20 - Misplaces things more than usual.
 - *like normal failures of memory/forgetfulness, only much more frequent*
 - *forgets where they put something down e.g. book, glasses, etc.*
- 21 - Easily distracted by surrounding noises.
 - *either by other people or machines, etc.*
- 22 - Places things in inappropriate places.
 - *either in body cavity, or in wrong location, such as shoes in refrigerator*

3 Emotional Behaviour

- 23 - Shows little or no emotion.
 - *reduction of normal emotional range*
- 24 - Mood changes for no apparent reason.
- 25 - Expresses inappropriate emotions, either type or intensity.
 - *e.g. laughing at news of a death, or crying at mild disappointment*
- 26 - Makes uncharacteristically pessimistic statements.
- 27 - Expresses suicidal feelings, threatens to hurt him/herself

4 Aggressive Behaviour

- 28 - Verbally abusive at times.
 - *must be directed at someone or something*
- 29 - Uncharacteristically excitable, easy to upset; reacts catastrophically.
 - *reactions to change are exaggerated*
 - *intensity of emotional reaction is excessive for the situation*
- 30 - Throws things at, or pinches others
- 31 - Attempts to hit/strike out at others.

5 Misperceptions/Misidentifications Behaviour

- 32 - Claims an object or possession looks similar to, but is not the real one.
 - *e.g. the family car in driveway is not recognized as own car, or a piece of jewelry/glasses is identified as looking similar to but not their own*
- 33 - Claims a family member looks similar (to that person) but is not the true one.
- 34 - Thinks present dwelling is not their place of living.
 - *e.g. the person in the nursing home does not recognize that they live in that facility*
 - *or, the person who lives in their own home but states they want to, or is packing to, "go home"*
- 35 - Thinks people are present who aren't.
 - *thinks people are present in the room or somewhere in the house when in fact they are not e.g. believes that people on TV are real and in the room, a deceased family member is living elsewhere in the house, misinterprets own image in mirror as another person*
- 36 - Sees or hears things that are not there.
 - *includes delusions and hallucinations*
- 37 - Talks to pictures or mirrors.
 - *assumes that image of self in mirror is another person, or person in picture is real*

6 Paranoid Behaviour

- 38 - Suspicious of family and friends.
 - *accuses family or staff of putting poison in food or drinks*
- 39 - Suspicious about money issues.
 - *suspects people around them are trying to steal their money*
 - *suspects people around them are taking unusual interest in their financial affairs*
- 40 - Accuses others of stealing his or her things.
- 41 - Accuses spouse of infidelity.
 - *refers to current behaviour not some incident from long past.*
- 42 - Expresses suspicion around taking medication.
 - *suggests that the contents of the medicine bottle is not what it says on the label*
 - *believes that the medicine is poison*
 - *NOT questions re the value of the medication*

7 Judgement/Insight

- 43 - Seeks constant attention.
 - *often keeps bothering staff for inconsequential matters*
- 44 - Eats non-food items.
- 45 - Grabs others nearby.
- 46 - Shows increased sexual drive, interest.
 - *toward either sex*
- 47 - Makes inappropriate sexual advances.
 - *behaviour should be explicit and not vague references that could be interpreted in many ways*
- 48 - Accident prone, gets hurt a lot.
- 49 - Unable to identify personal safety risks.
 - *unable to foresee obviously dangerous outcomes to certain actions*
 - *unable to take personal safety into account in decision making*
 - *will eat food even if clearly spoiled*
- 50 - Invades personal space.
 - *when carrying on a conversation, comes much closer than is normally considered appropriate*

8 Perseveration

- 51 - Repeats same actions over and over.
 - *such as tapping or rocking in a chair*
- 52 - Repeats same words or phrases.
 - *includes repetition of syllables or sounds*
- 53 - Talks about same topic over and over again.
 - *slightly different from item 53 which refers to words or phrases only*
 - *this item refers to stories, or topics of conversation e.g. "When will dinner be served?"*
- 54 - Repeatedly shouts or calls out.
- 55 - Clapping/noise making.
 - *either with hands, feet, or an object*

9 Motor Restlessness

- 56 - Desire to pace or walk almost constantly.
 - *different from aimless wandering, i.e. faster*
- 57 - Can't sit still; restless; fidgety.
 - *e.g. restlessly moving from chair to chair (or in wheelchair, etc.)*
- 58 - Tries doors, windows.
 - *seems unable to inhibit the tendency to use handles and knobs on things*
 - *exit seeking behaviour*
- 59 - Repeatedly rearranges furniture.
 - *either furniture in own room or elsewhere*
- 60 - Bangs head deliberately

10 Sleep/Activity/Sundowning

- 61 - Falls asleep at uncharacteristic times.
 - *during conversations or during meals, or increased daytime sleep*
- 62 - Gets up and wanders or awakens frequently at night more than usual.
- 63 - Sleeps more.
 - *more than usual*
- 64 - Behaviour more agitated or impaired in late afternoon.
 - *ADL is more impaired in late afternoon or early evening; exacerbation of already problematic behaviours*

11 Motor/Spatial Problems

- 65 - Poor coordination seen in limb/finger movements.
 - *e.g. difficulty using pens or pencils, or moving a cup to one's mouth*
 - *includes tremor*
 - *Score even if due to physical problems e.g. arthritis, vision, etc.*
- 66 - Slowness of movement.
- 67 - Unsteadiness when walking.
- 68 - Difficulty judging object sizes or how near an object is from themselves.
 - *may make exaggerated steps to step over something quite low, such as a crack in the floor, change in carpet colour*

12 Language Difficulties

- 69 - Substitutes some words for others.
 - *substitutes an incorrect term for an object or uses a nonsensical word*
 - *makes substitutions usually without knowing it*
- 70 - Does not speak unless spoken to. (e.g. Does not participate in conversations.)
- 71 - Often cannot find the right word.
 - *halted speech while struggling to find the right word*
- 72 - Trouble pronouncing words.
- 73 - Does not understand simple commands, explanations.
- 74 - Speaks in meaningless phrases, or unintelligible language

THE KINGSTON SCALES

Cognition

Kingston Standardized Cognitive Assessment - Revised + Drive Score (KSCAr^{+Drive})
Brief Kingston Standardized Cognitive Assessment - Revised (BKSCAr)
mini-Kingston Standardized Cognitive Assessment - Rev (mini-KSCAr)

Behaviour

Kingston Standardized Behavioural Assessment - Community Form (KSBA_{comm})
Kingston Standardized Behavioural Assessment - Long Term Care Form (KSBA_{LTC})

Caregiver Stress

Kingston Caregiver Stress Scale (KCSS)

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