

Manual for the Self Care Inventory

Annette M. La Greca

University of Miami

September 2004

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Self Care Inventory (SCI): Description and Psychometric Support

Description

The Self-Care Inventory (SCI), a 13-item self-report measure, was developed by La Greca and colleagues (1988) to assess patients' perceptions of the degree to which they adhere to treatment recommendations for their diabetes self-care. The instrument was subsequently revised (La Greca, 1992) and now consists of 14 items. (See Appendix A.) On the SCI, self-care is defined as the daily regimen tasks that the individual performs to manage diabetes. In conjunction with focus groups conducted with diabetes educators, items for the SCI were developed to reflect the main aspects of the treatment regimen for type 1 diabetes (e.g., Skyler & Cahill, 1981). The SCI includes items that focus on blood glucose testing and monitoring, insulin and food regulation, exercise, and emergency precautions (e.g., carrying sugar to treat reactions). However, many of the items also may be applicable to individuals with type 2 diabetes.

In clinical settings, the SCI is intended to be used in the context of an individual's prescription for diabetes care. Unlike measures that assess the frequency of certain adherence behaviors (e.g., frequency of glucose testing; number of doses of insulin administered) the SCI doesn't presume that all individuals have the same treatment prescription, nor is it based on an "ideal" regimen, as is the case with 24-hour recall interviews (Johnson, 1992). Rather, the SCI allows for the possibility of varying treatment regimens across individuals, but evaluates individuals' perceptions of how well they adhere to their treatment prescriptions.

Use of SCI with Children and Adolescents

The SCI has been used with ethnically diverse samples of children (Davis et al., 2001; Field, Delamater, Shaw, & La Greca, 1997; La Greca, Follansbee, & Skyler, 1990) and adolescents with Type 1 diabetes (e.g., La Greca, Swales, Klemp, Madigan, & Skyler, 1995); for preadolescent children, parents are the informants for their child's level of self-care (e.g., Davis et al., 2001). In all the above-cited studies, children and adolescents' with higher levels of self-care on the SCI had significantly better metabolic control (i.e., lower HbA1c levels) than those with lower levels of self-care. Relationships between the SCI and other variables have contributed to the construct validity of the instrument. For example, Wysocki et al. (1996) studied 100 youth, ages 5 to 17 years, with type 1 diabetes. For each child, an index of self-care autonomy to maturity was calculated. They found poorer self-care adherence, as measured by the SCI, was related to increasing self-care autonomy relative to psychological maturity. La Greca et al. (1995) found that adolescents' perceptions of self care, as assessed by the SCI, predicted their levels of metabolic control, independently from measures of anxiety and depression.

Reliabilities

Internal consistencies for the SCI items have been reported to be .80 or higher in several studies of children and adolescents (e.g., Davis et al., 2001; Delamater et al., 1997; La Greca et

al., 1995). Delamater et al. (1997) reported a test-retest reliability of .77, over a 2 – 4 week period, for overall adherence on the SCI in a sample of 103 adolescents.

Use with Adults with Type 1 Diabetes

The SCI has also been used with adults who have Type 1 diabetes (Greco et al., 1990; La Greca, 1992; Wick et al., 1991). (See Appendix B.) Although unpublished, these data suggest that the SCI has good reliability and validity with adults. For example, Greco et al. (1990) studied 44 adults with Type 1 diabetes (mean age = 31.5 years), comparing their self-care levels on the SCI with adherence indicators taken from two 24-hour recall interviews for diabetes care (Johnson, 1992). The SCI item reflecting glucose testing frequency correlated strongly with glucose testing frequency from the 24-hour recall interview ($r = .79, p < .001$); the eating frequency and exercise frequency items on the SCI also correlated with their counterparts from the interview (r 's = .54 and .31, respectively, p 's < .05). Moreover, the SCI items were significant predictors of metabolic control, accounting for 36% of the variance in HbA1c ($F = 4.43, p < .01$), in contrast to 28% of the variance accounted for by the 24-hour recall interview.

Scoring of the SCI

Based on the above findings, the brief manual for the SCI (La Greca, 1992; see Appendix B) recommends that all 14 items be administered (for clinical purposes), but that seven items be used in calculating overall adherence scores. These include items: 1, 2, 5, 6, 7, 8, and 13, as proper self-care in these areas should be linked with better diabetes management and control. Findings have shown that ketone testing (#3) is rarely reported by persons with diabetes; and the item on administering the correct dose of insulin (#4) is almost uniformly endorsed by persons with diabetes. Similarly, the items reflecting insulin adjustment (#6) and appointment-keeping (#11) are skewed so that most people report doing these things very often. These items may be of clinical interest, however.

Obtaining copies of the SCI

A copy of the SCI is contained in Appendix A. Because the instrument is copyrighted, it can only be used with the permission of the author, who may be contacted as follows: Annette M. La Greca, Ph.D., Department of Psychology, P.O. Box 284185, University of Miami, Coral Gables, FL 33124. Email: alagreca@miami.edu.

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Appendix A

Copy of the Self Care Inventory

SCI

Please rate each of the items according to HOW WELL YOU FOLLOWED YOUR **PRESCRIBED REGIMEN FOR DIABETES CARE** in the *past month*. Use the following scale:

- 1 = Never do it
- 2 = Sometimes follow recommendations; mostly not
- 3 = Follow recommendations about 50% of the time
- 4 = Usually do this as recommended; occasional lapses
- 5 = Always do this as recommended without fail
- NA = Cannot rate this item/ Not applicable

In the *past month*, how well have you followed recommendations for:

- | | | | | | | |
|--------------------------------------------------------------|---|---|---|---|---|----|
| 1. Glucose testing | 1 | 2 | 3 | 4 | 5 | NA |
| 2. Glucose recording | 1 | 2 | 3 | 4 | 5 | NA |
| 3. Ketone testing | 1 | 2 | 3 | 4 | 5 | NA |
| 4. Administering correct insulin dose | 1 | 2 | 3 | 4 | 5 | NA |
| 5. Administering insulin at right time | 1 | 2 | 3 | 4 | 5 | NA |
| 6. Adjusting insulin intake based on
blood glucose values | 1 | 2 | 3 | 4 | 5 | NA |
| 7. Eating the proper foods; sticking to meal plan | 1 | 2 | 3 | 4 | 5 | NA |
| 8. Eating meals on time | 1 | 2 | 3 | 4 | 5 | NA |
| 9. Eating regular snacks | 1 | 2 | 3 | 4 | 5 | NA |
| 10. Carrying quick-acting sugar to treat reactions | 1 | 2 | 3 | 4 | 5 | NA |
| 11. Coming in for appointments | 1 | 2 | 3 | 4 | 5 | NA |
| 12. Wearing a medic alert ID | 1 | 2 | 3 | 4 | 5 | NA |
| 13. Exercising regularly | 1 | 2 | 3 | 4 | 5 | NA |
| 14. Exercising strenuously | 1 | 2 | 3 | 4 | 5 | NA |

Appendix B

Scoring of the SCI and Use with Adults

Self Care Inventory (SCI): Scoring and Use with Adults

Annette M. La Greca
University of Miami

The Self Care Inventory is intended to assess patient's perceptions of the degree to which they adhere to recommendations for diabetes care. The measure is administered to the patient, in the case of adolescents and adults. With preadolescents, it is recommended that parents complete the form.

Although it is recommended that all 14 items be administered, we find that certain items may not be useful for calculating overall adherence scores. Item #3 (ketone testing) is rarely reported by persons with diabetes. On the other hand, Item #4 (administer correct dose of insulin) is almost uniformly endorsed by persons with diabetes. Similarly, items #6 (adjust insulin) and #11 (come in for appointments) are skewed so that most people report doing these things often. These items may be of clinical interest, however.

When calculating an overall adherence score, we recommend using the average of items: 1, 2, 5, 6, 7, 8, & 13. That is because proper self-care in these areas should be linked with better metabolic control.

We are working with several conceptual schemes for grouping the items into coherent factors. Based on our current view, we'd recommend the following groupings (means of each group of items):

Blood Glucose Regulation: Items 1, 2, and 6

Insulin and Food Regulation: Items 5, 7, and 8

Exercise: Items 13 and 14

Emergency Precautions: Items 10 and 12

Attached are means and correlations among items that were taken from a study of young adults with diabetes.

Means (SD) For Self Care Items

Item	Mean	Median	Skew
1. Glucose Testing (1-5)	3.39 (.15)	4.00	-.44
2. Glucose Recording (1-5)	2.91 (.17)	3.00	.13
3. Ketone Testing (1-5)	1.93 (.15)	1.00	1.18
4. Administer correct dose (2-5)	4.70 (.06)	5.00	-2.20
5. Administer insulin/right time (2-5)	4.22 (.08)	4.00	-.56
6. Adjust insulin based on blood (1-5)	4.05 (.13)	4.00	-1.35
7. Eat proper food/stick to diet (1-5)	3.47 (.12)	4.00	-.72
8. Eat meals on time (1-5)	3.57 (.12)	4.00	-.62
9. Eat regular snacks (1-5)	3.23 (.15)	3.00	-.19
10. Carry sugar/reactions (1-5)	3.54 (.18)	4.00	-.58
11. Come in for appts. (1-5)	4.15 (.14)	5.00	-1.37
12. Wear medic alert ID (1-5)	2.63 (.21)	1.00	.38
13. Exercise regularly (1-5)	3.19 (.15)	3.00	-.33

Based on a sample of 71 - 80 adults with IDDM in Miami, FL
 Numbers in parentheses represent the range of scores.

Recommended Categorization Scheme
Correlations Based on the Above Sample of Adults

Blood Glucose Regulation

	2	6
1 (glu test)	.76***	.58***
2 (glu record)		.54***
6 (adjust insulin)		---

Insulin and Food Regulation

	5	7	8
5 (insulin on time)	---	.53***	.68***
7 (eat proper)		---	.70***
8 (eat on time)			---

Exercise

13 and 14

Emergency Precautions

10 (carry sugar) and 12 (carry ID) .33**

* $p < .05$, ** $p < .01$, *** $p < .001$

Potential Alternate Groupings of Items
And Associated Correlations in Sample of Adults with Type 1 Diabetes ($N = 80$)

Blood Glucose Regulation

Items 1 (glu test), 2 (glu record), 3 (ketone test), and 6 (adjust insulin)

Insulin and Food Regulation

Items 4 (correct dose), 5 (insulin on time), 7 (eat proper), 8 (eat on time), 9 (eat snacks)

Exercise

Items 13 and 14

Emergency Precautions

Items 10 (carry sugar), 12 (carry ID)

Other

Item 11 (come in for appointments)

Blood Glucose Regulation

	2	3	6
1 (glu test)	.76***	.35***	.58***
2 (glu record)	---	.23*	.54***
3 (ketone test)		---	.23*
6 (adjust insulin)			---

Insulin and Food Regulation

	5	7	8	9
4 (correct dose)	.20*	.12	.15	.36***
5 (insulin on time)	---	.53***	.68***	.54***
7 (eat proper)		---	.70***	.62***
8 (eat on time)			---	.75***
9 (eat snacks)				---

Exercise

13 and 14

Emergency Precautions

10 (carry sugar) and 12 (carry ID) .33**

Other

Item 11 (come in for appointments)

* $p < .05$, ** $p < .01$, *** $p < .001$