The purpose of the study was to examine aspects of reliability and validity of the German version of the Care Dependency Scale (CDS), a Dutch assessment instrument originally developed for demented and mentally handicapped patients. Data of 1806 patients, 60 years or older from a larger sample, collected in 11 hospitals in Germany, were analyzed. Reliability was determined by Cronbach’s alpha, showing a very good result with a value of .98. Criterion related validity was examined by comparing the data of the CDS with the German nursing personal regulation. The scores of the CDS correlate to the scores of the personal regulation.

The study shows further that most elders are fairly independent and care dependency increases with age.

(Geriatr Nurs 2003;24:40-3)
More than 2 million people are care dependent in Germany, and most of them are elderly. The expected demographic changes connected with an increase of chronic illnesses will lead to an increase of care dependency. Furthermore, hospitalizations also become more frequent with progressive age. Sixteen million people in Germany were treated in hospitals in 1999, the majority of whom were older than 50 years and had primary illnesses of the circulation system. The care of these patients represents a large challenge for all care providers in the health care system, especially nurses.

LITERATURE

Nearly 50 years ago, Virginia Henderson said nurses are responsible for their patients 7 days a week, 24 hours a day. The basis for their care is an assessment that helps the nurse support patients’ needs so they can maintain their daily activities, including physical and psychosocial functions. However, the losses of autonomy, independence, and self-sufficiency are great sources of anguish for sick people and cause distress and dependence on others for intimate help. The fear of being dependent on someone is very deep, particularly in the elderly.

Studies have shown that dependent behavior in patients and nursing home residents is unwittingly supported and promoted by nurses; on the other hand, independent behavior often is ignored and not supported. Ignoring independence means promoting dependency, which leads to decreased use of self-care abilities and subsequent resignation or depression or the wish for a premature death.

Nurses should help their patients use their self-care abilities to become independent again. Most patients want to go home and leave the hospital as soon as possible. To reach this aim, professional care is needed. Such care starts and continues with an assessment. In such a way, continuity in care can be achieved. Continuity in nursing care is a decisive criterion by which patients can qualitatively evaluate good care and therefore is crucial for patient satisfaction.

All health care institutions are confronted with the demands of cost savings by having fewer personnel or resources. Therefore, we need effective measurements and aids for qualitatively good care based on patient needs. We need institutions and nursing professionals who promote independence and thereby improve the quality of life of patients and home residents.

Studies show that the use of assessment instruments improves practice quality. Söderhamn and Berthold recommend using only one valid and reliable instrument with an extensive and holistic view instead of various instruments. Some assessment instruments, like the Katz Scale and the Barthel Index, were developed to estimate patients’ activities of daily living. However, these instruments were not developed from the nursing perspective. Little is known about the psychometric properties of the Katz Scale, and the Barthel Index is limited in scope because patients’ psychologic and sociologic aspects are not taken into account.

A better instrument for the assessment of care dependency is the Care Dependency Scale (CDS). The main research question of this study is whether the German version of the CDS is a reliable and valid instrument to assess elderly patients in hospitals.

This instrument was developed in the Netherlands in 1996 by Dijkstra et al. For demented and mentally handicapped people and has been psychometrically tested in different European countries. In Germany, the CDS was tested for use in nursing homes and on geriatric wards. The scale also was tested for use in hospitals but only on surgical, geriatric, and pediatric wards. Because the samples were small, further testing was recommended.

The 15-item scale measures a person’s care dependency with regard to eating and drinking, continence, body posture, mobility, day and night patterns, getting dressed and undressed, body temperature, hygiene, danger avoidance, communication, contact with others, sense of rules and values, daily activities, recreational activities, and learning abilities. Each item has a brief description, and every criterion is explained in the CDS instruction guide. Table 1 features an example.

Nurses have a 5-point Likert scale from which to choose for each component of the CDS, allowing them to assess a patient’s reliance from completely dependent to completely independent. Accordingly, values between 15 and 75 points can be obtained; the smaller the value, the more the patient depends on others for care.

METHODS

The CDS was part of a questionnaire used in a prevalence study about pressure ulcers, falls, and care dependency in Berlin in April 2001. Data were collected from more than 3,000 informed patients in 11 hospitals (85.4% response rate). Data were analyzed from patients 60 years and older (n = 1806) using SPSS (Chicago, Il.) 10.0 software.

This study investigated one aspect of reliability. The homogeneity was determined by Cronbach’s alpha. One important part of validity is the criterion-related validity. This was investigated by comparing CDS data with the data of the so-called German nursing personnel regulation. Pearson’s product-moment correlation coefficients were used to examine the correlations between patient age and each of the 15 CDS items.

The odds ratio was determined to provide the relationship between care dependency and age. The sample was divided into two groups: patients younger than 80 years and patients at least 80 years or older. The sample was further divided into two groups regarding dependency. One group consisted of patients dependent in the criteria range of 1 to 3 (complete, predominant, and partial dependence, respectively); the other group contained patients at the criteria 4 and 5 levels (predominantly and completely independent, respectively).
RESULTS

Ranging in age from 60 to 106, the patients’ mean age was 75.4 (SD = 9.4). The majority of 60, 2% (n = 1088) were female. Most diagnoses were illnesses of the circulatory system (25.4%), followed by neoformation (16.1%).

One method for assessing internal consistency is Cronbach’s alpha. Cronbach’s alpha coefficient for the CDS in this study was .98. This value constitutes a high degree of internal consistency and compares well with other psychometric studies on the CDS. The reliability coefficient should be 0.90 or better if measures are to be used for individuals.20

Validity

Criterion-related validity is the degree to which the scores of an instrument correlate with another external criterion.21 This was examined by comparing the CDS data with the data of the so-called nursing personnel regulation, a policy for determining the care requirements of the patients in three levels. Level A1 means lowest requirements; level A3 means highest requirements. A comparison of the data, shown in Table 2, indicates that a higher classification score is associated with an increase in dependency.

Patients at least 80 years old were 2 to 3.5 times more likely than younger patients to be care dependent. More than half of the patients 80 years or older were care dependent in the areas of hygiene, mobility, getting dressed and undressed, danger avoidance, and daily activities (Table 3).

The smallest changes were found on the geriatric wards, where the patients older than 80 years who were nearly independent before arrival became partly dependent in getting dressed and undressed and hygiene. Patients older than 80 years on intensive care units are completely dependent in all items.

DISCUSSION

The mean dependency was 59.1 (SD = 18.6; range = 37.1 to 70.4). As shown in Table 4, patient care dependency differed among the specialty groups. Patients on the otorhinolaryngology, ophthalmology, urology, and gynecology wards were nearly care independent. Care dependency was highest on the intensive care units, with a mean care dependency score of 37.1.

A small difference arose between medical and surgery wards. Most patients were predominantly or completely independent. The highest dependency categories were continence (23.1%), mobility (27.2%), getting dressed and undressed (26.7%), hygiene (28.2%), avoidance of danger (24.1%), daily activities (24.3%), and recreational activities (22.0%). A strong relationship existed between mobility and these items. Finally, Table 5 shows that dependency among all disciplines increases with age.
Therefore, the chance of resistance and rejection in clinical practice is small. The scale can be implemented in every documentation system and is useful across disciplines. Appropriate care can be offered after the assessment, and patients’ self-care abilities and independence can be supported.

The study shows that we no longer can assume that elders in general are care dependent. Care dependency increases with age, but most elders are fairly independent. This finding supports the results of an earlier German study.

Nurses have to look carefully at every individual patient to properly support him or her in remaining as independent as long as possible. Nurses must put their emphasis on aspects such as avoiding danger to prevent falls, for example. Neglected aspects—such as daily activities or recreational activities—must be more strongly considered in the future by professionals to offer good care. For comprehensive and holistic care, nurses must carefully examine all aspects. To assess functional status only is not enough. A comprehensive assessment from a nursing perspective enables nurses to help patients acquire independence. This assistance is a measure of their success and shows adequate and professional care.

RECOMMENDATIONS

Although the study sample was large, some patient groups were small, such as those on otorhinolaryngology, ophthalmology, and urology wards. Therefore, it is recommended to test the CDS with a greater or more diverse sample. It also is necessary to test the scale in home care settings. The application of additional reliability aspects, such as interrater and intrarater reliability, also are recommended.

REFERENCES


CHRISTA LORRMANN, RN, MA, PhD(c), is a lecturer and researcher in the Department of Nursing Science at the Centre for the Humanities and Health Sciences, Humboldt University of Berlin, Germany. ATE DIJKSTRA, RN, Med, PhD, is a researcher in the Northern Center for Healthcare Research, University of Groningen, Groningen, The Netherlands. THEO DASSEN, RN, PhD, FEANS, is a professor in the Department of Nursing Science at the Centre for the Humanities and Health Sciences at Humboldt University of Berlin, Berlin, Germany.

Copyright © 2003 by Mosby, Inc.
0197-4572/2003/$30.00 + 0
doi:10.1067/mgn.2003.8

Table 4. Patient Care Dependence by Discipline

<table>
<thead>
<tr>
<th>Specialty</th>
<th>&lt; 70 years</th>
<th>70-79 years</th>
<th>80-89 years</th>
<th>90+ years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive care</td>
<td>44.2</td>
<td>34.2</td>
<td>26.0</td>
<td></td>
<td>62.1</td>
</tr>
<tr>
<td>Neurology</td>
<td>62.7</td>
<td>48.7</td>
<td>51.3</td>
<td></td>
<td>54.3</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>62.7</td>
<td>56.7</td>
<td>47.0</td>
<td></td>
<td>56.0</td>
</tr>
<tr>
<td>Geriatrics</td>
<td>46.1</td>
<td>57.3</td>
<td>53.7</td>
<td></td>
<td>53.0</td>
</tr>
<tr>
<td>Medical</td>
<td>64.4</td>
<td>62.5</td>
<td>54.2</td>
<td></td>
<td>54.7</td>
</tr>
<tr>
<td>Surgery</td>
<td>67.8</td>
<td>62.2</td>
<td>52.0</td>
<td></td>
<td>56.2</td>
</tr>
<tr>
<td>Urology &amp; gynecology</td>
<td>73.2</td>
<td>69.1</td>
<td>64.7</td>
<td></td>
<td>69.8</td>
</tr>
<tr>
<td>Otorhinolaryngology</td>
<td>72.0</td>
<td>71.5</td>
<td>69.1</td>
<td></td>
<td>69.5</td>
</tr>
</tbody>
</table>

Table 5. Mean Care Dependency in Various Age Groups by Discipline

<table>
<thead>
<tr>
<th>Discipline</th>
<th>&lt; 70 years</th>
<th>70-79 years</th>
<th>80-89 years</th>
<th>90+ years</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intensive care</td>
<td>44.2</td>
<td>34.2</td>
<td>26.0</td>
<td></td>
<td>62.1</td>
</tr>
<tr>
<td>Neurology</td>
<td>62.7</td>
<td>48.7</td>
<td>51.3</td>
<td></td>
<td>54.3</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>62.7</td>
<td>56.7</td>
<td>47.0</td>
<td></td>
<td>56.0</td>
</tr>
<tr>
<td>Geriatrics</td>
<td>46.1</td>
<td>57.3</td>
<td>53.7</td>
<td></td>
<td>53.0</td>
</tr>
<tr>
<td>Medical</td>
<td>64.4</td>
<td>62.5</td>
<td>54.2</td>
<td></td>
<td>54.7</td>
</tr>
<tr>
<td>Surgery</td>
<td>67.8</td>
<td>62.2</td>
<td>52.0</td>
<td></td>
<td>56.2</td>
</tr>
<tr>
<td>Urology &amp; gynecology</td>
<td>73.2</td>
<td>69.1</td>
<td>64.7</td>
<td></td>
<td>69.8</td>
</tr>
<tr>
<td>Otorhinolaryngology</td>
<td>72.0</td>
<td>71.5</td>
<td>69.1</td>
<td></td>
<td>69.5</td>
</tr>
<tr>
<td>&amp; ophthalmology</td>
<td>72.0</td>
<td>71.5</td>
<td>69.1</td>
<td></td>
<td>69.5</td>
</tr>
</tbody>
</table>