

TNO Arbeid



TNO research project summary

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Professionalization of home care services

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**User tests of the CarePro system in a home care
services setting**

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Introduction

Working conditions for the staff of home care services ('home helps') have improved markedly in recent years. Nevertheless, some aspects of the work continue to be physically demanding. This is particularly so in the case of household cleaning. Traditionally, staff have worked with whatever materials are made available by the client. It would be a major step forward if they were able to undertake their work in the most convenient and responsible manner, using the same materials regardless of location. This calls for the introduction of a professional 'domestic toolkit'.

Just such a toolkit has been developed and tested in a joint project involving the Sector Funds for Health and Welfare (SFZW), Senter, MGS International and TNO. The result is a complete system for domestic home care services, known as CarePro. Part of the system is a cleaning kit comprising microfibre materials and accessories. These are conveniently stored and carried in a specially designed bag which has been developed with the help of home care staff themselves. The CarePro system also includes full training in the use of the materials supplied.



Photo 1 The prototype of the CarePro bag and cleaning kit used in the test. Both the bag and the kit have been subject to further development based on the results of the test.

The entire system has now been tested 'in the field'. The test involved a comparison between the 'old' and the 'new' situation, with information provided by eleven users by means of questionnaires and on-site observations. The observations related to those tasks which home care staff had identified as requiring greatest physical effort. In ascending order, they are:

1. vacuuming ¹
2. cleaning the bath or shower
3. mopping floors
4. cleaning the lavatory
5. wet-cleaning of surfaces (with a damp cloth or mop)
6. dry-cleaning of surfaces (dusting)
7. washing windows.

¹ An industrial-type vacuum cleaner was used during the test. Based on the test results, it was decided not to include the vacuum cleaner in the CarePro system; accordingly, this component is not considered further in this summary.

The findings with regard to the users' subjective perceptions, physical demands and efficiency are presented below.

Subjective perceptions

In general, users had a positive attitude towards the concept as a whole. They attached greatest importance to the microfibre products and the training. The appearance of the carrying bag and the set of materials was rated as good. Users singled out the microfibre products as having a particularly professional image.

Users rated both the general ease of use of the set and the cleaning results as good. They found that the materials were easier to use than the traditional products while producing the same cleaning results.

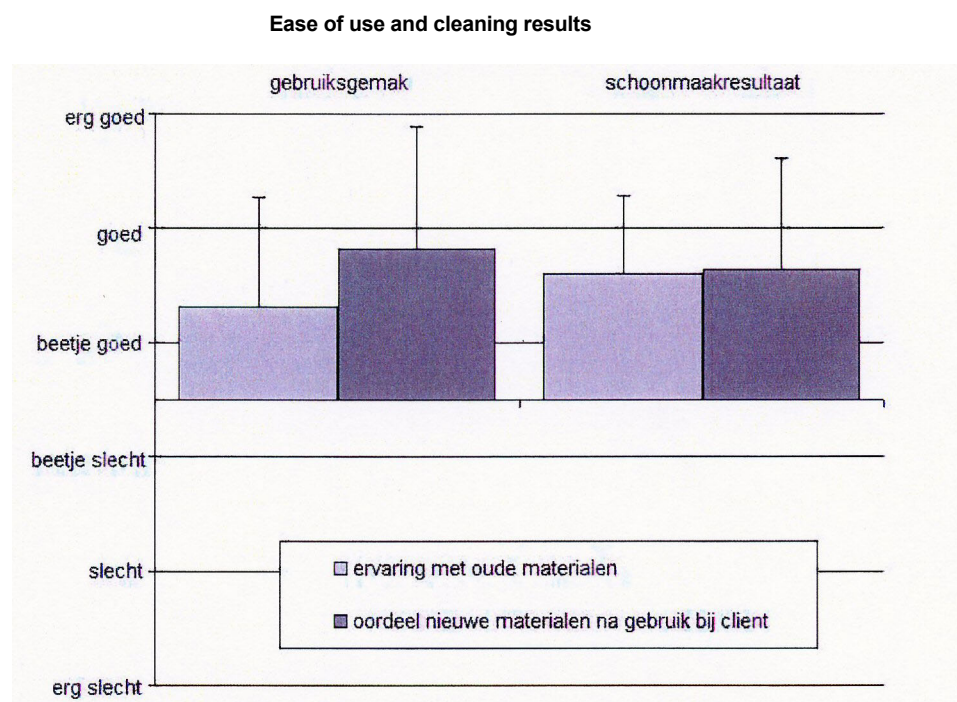


Figure 1 Perceptions of user-friendliness and cleaning results of old and new materials

Physical demands

The analysis of working methods revealed marked disparities in the way in which the new materials were used. Moreover, it was observed that not all users had adopted the new working methods in full.

The test subjects reported that the physical effort required for each of the six tasks was slightly less than when using traditional methods. This finding was supported by objective data relating to posture and movement. In particular, the upper body position was much improved. The time spent in a bending position was reduced in all tasks, from an average of 30% to 22% of the working time.

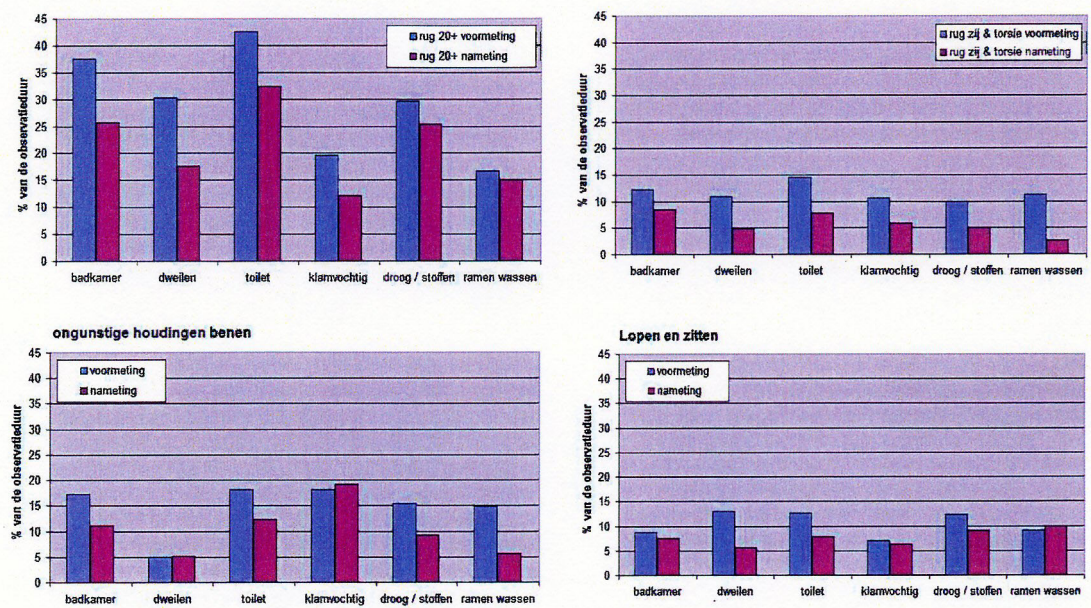


Figure 2-5 Percentage of observation time spent in certain positions in the old situation (reference measurement) and in the new situation (test measurement). 'Back 20+' indicates that the upper torso is inclined forwards by more than twenty degrees. 'Back lateral and torsion' indicates that the upper torso is bent to the left or right or twisted, possibly in combination with bending. 'Unfavourable leg position' indicates squatting, kneeling, balancing on one leg or reaching on tiptoes.

The proportion of time spent with the back twisted or bent to the side decreased from an average of 12% to 6% of the overall working time. Time spent in squatting, kneeling, standing on one leg or reaching on tiptoes also decreased, from an average of 14% to 10% of the working time. The one exception was the task of 'mopping the floor', for which the time spent in a squatting position increased. The use of buckets and the necessity to wring out cloths was reduced dramatically.

Efficiency

In the test subjects' perception, all six tasks could be completed in less time than was required in the traditional situation. The objective observations partly confirm this view. The average time required for four of the tasks was reduced by 14%. The time required for 'Cleaning the bath or shower' remained largely unaltered, while 'mopping the floor' took slightly longer than before. One possible reason for this is that the users had difficulty adjusting the 'click' system of the equipment due to lack of experience.

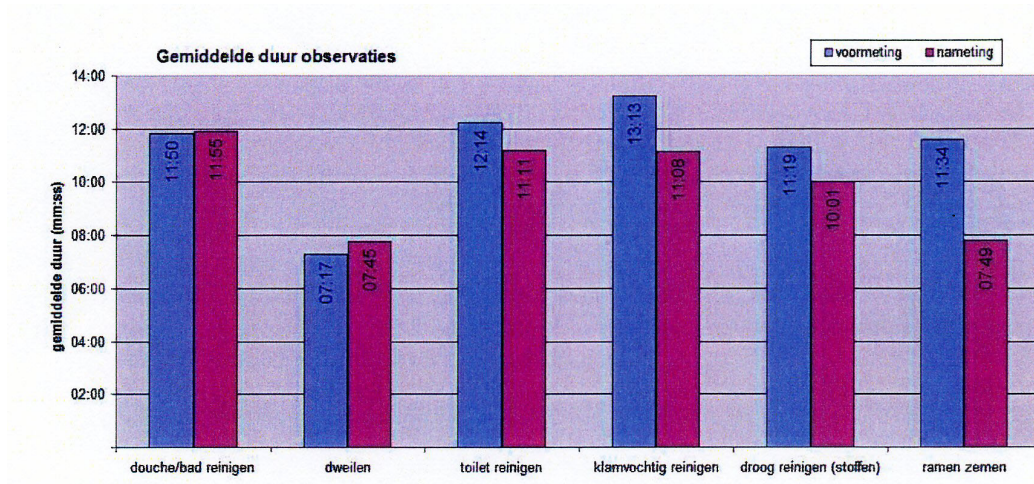


Figure 6 The average duration of observed activities in the old and new situations

The time savings are accounted for not only by the use of microfibre materials but also by the reduction in preparation time and in the time required for tidying up afterwards. For example, when using the CarePro system it is no longer necessary to fetch buckets of clean water. The carrying bag ensures that all materials remain within easy reach at all times.

Summary

To summarize, we conclude that working with the special bag and the materials provided, in combination with the training course, leads to increased ease of use, a reduction in physical effort required, and greater efficiency. The new CarePro system also does much to improve the image of domestic services, representing a further professionalization of this field of work. In the fullness of time, it may also be expected to reduce absenteeism through illness and to promote reintegration.

TRANSLATIONS FIGURES

Figure 1

Ease of use

Cleaning results

very good
good
adequate
not so good
poor
very poor

- Experience with traditional materials
 - Opinion of new materials after use at a client's home
-

Figure 2

back 20+ (reference measurement)

back 20+ (test measurement)

percentage of observation time

bathroom
mopping
lavatory
wet-cleaning
dry-cleaning/dusting
washing windows

Figure 3

back lateral & torsion (reference measurement)

back lateral & torsion (test measurement)

percentage of observation time

bathroom
mopping
lavatory
wet-cleaning
dry-cleaning/dusting
washing windows

Figure 4

Unfavourable leg position

reference measurement

test measurement

percentage of observation time

bathroom

mopping

lavatory

wet-cleaning

dry-cleaning/dusting

washing windows

Figure 5

Walking and sitting

reference measurement

test measurement

percentage of observation time

bathroom

mopping

lavatory

wet-cleaning

dry-cleaning/dusting

washing windows

Figure 6

Average duration of observed activities

reference measurement

test measurement

percentage of observation time (mm:ss)

cleaning bath/shower

mopping

cleaning lavatory

wet-cleaning

dry-cleaning/dusting

washing windows