

The closure of Nastola Care Home: a longitudinal study on deinstitutionalisation

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Abstract: The Nastola Care Home, an institution housing 95 people with intellectual disability, was closed in 1989, with residents moving out into small community group homes of five people each. An intensive process of reorganization, including unitisation and staff training, occurred within the institution before its closure. The adaptive behaviour of 66 residents was measured a total of seven times, with the first phase beginning two and half years before the move, and the second phase extending to two years after the move. The results indicated an increase in adaptive skills of the residents in both phases. Challenging behaviour of the residents decreased before the move, but not afterwards. Community participation and family contacts with the residents increased after the move. With regard to daily care practices, there was a major change from institution-oriented practices in the institution to individual-oriented care practices in the community group homes. The results of this deinstitutionalisation effort, which is the largest thus far in Finland, are discussed in relationship to research and the policy of deinstitutionalisation.

The process of deinstitutionalisation, occurring in several countries around the world (Emerson et al., 1996; Lakin, Braddock & Smith, 1994), has been documented in numerous studies which have evaluated its effects on the lives of people with intellectual disability who have moved from institutional settings to community environments. Studies have typically confirmed the superiority of community environments when compared to institutional settings (Emerson & Hatton, 1994; Emerson & Hatton, 1996; Conroy, 1992; Haney, 1988; Larson & Lakin, 1991; Kim, Larson, & Lakin, 2001; Lynch, Kellow & Wilson, 1997; Rotegard, Bruininks, Holman, &

Lakin, 1985; Young, Ashman, Sigafos & Grevell, 2001; Young, Sigafos, Suttie, Ashman & Grevell, 1998).

The most common measurement utilised to evaluate the effects of deinstitutionalisation has been the assessment of adaptive behaviour of those moving out of institutional settings. Studies have almost always shown improvements in adaptive behaviour associated with moves from institutions to small community living arrangements (Emerson & Hatton, 1996; Haney, 1988; Kim, Larson & Lakin, 2001; Larson & Lakin, 1989). Results concerning the effects of

deinstitutionalisation on challenging behaviour have been more variable. Some studies have indicated decreases in challenging behaviour after moving out, while others have reported no effects, or even increases in challenging behaviour (Kim, Larson & Lakin, 2001; Larson & Lakin, 1989; Emerson & Hatton, 1996).

Several studies have evaluated the effects of deinstitutionalisation on various aspects of the quality of life of service users. These measures have included, among others, the assessment of engagement, amount of staff contact, level of community participation, self-determination, freedom of choice, numbers of relationships, and levels of satisfaction (Conroy, 1992; Emerson & Hatton, 1996; Wehmeyer & Bolding, 2001). For example, de Kock, et al. (1988) reported that people with severe or profound intellectual disability, who moved from an institution to community group homes, used more community amenities and experienced greater family contact than before their move. A review made by Emerson and Hatton (1996) indicated that the majority of comparisons reported a significant increase in the use of community-based facilities in smaller community-based settings as compared with institutions.

Larson and Lakin (1989) noted that unit size obviously was an important factor in explaining the development of adaptive behaviour. People in institutions typically lived in larger housing units

than they did after moving into community settings. A study by Hemming, Lavender, and Pill (1981) showed that moving into smaller living units in an institution also produced improvements in adaptive behaviour. Other benefits associated with a smaller unit size in an institution included increases in culturally normative or "positive" activities (Hemming, Lavender, & Pill, 1981; Dalgleish & Matthews, 1981; Miura, 1986), more frequent interaction between residents and care personnel (Byrd, Sawyer, & Locke, 1983; Harris, Veit, Allen, & Chinsky, 1974; Hemming, Lavender, & Pill, 1981), and more individualised daily care practices (McCormick, Balla, & Zigler, 1975; Saloviita, 2000).

The present study concerns the largest single deinstitutionalisation effort in Finland thus far, the closing of the Nastola Care Home, which was an institution with approximately 100 residents. This study provides an opportunity to follow more closely the effects of unit size, because the closing of the Nastola Care Home was preceded by the unitisation of its wards into sizes comparative to the group homes people would be moving into. The aim of this study was to follow longitudinally the development of adaptive behaviour and challenging behaviour of residents, compare obtained levels of community participation and family contacts of residents before and after the move, and to measure the quality of daily care practices in the institution and in the

group homes. Despite its non-experimental character, with no contrast or control group design, this study provides an opportunity to follow changes occurring in the lives of people with intellectual disability during institutional reform and subsequent closure of an institution, followed by a move into community settings.

Method

Participants

When this study began, the Nastola Care Home housed 95 residents with intellectual disability. 66 of these residents remained in the study for the entire five years, participated in all seven measurements of adaptive behaviour, and form the group of participants for this study. The remaining 29 residents were not included as participants, either because they died or were moved outside the settings studied during the five years of this study. Of the participating 66 residents, 52% were men and 49% were women. Their ascribed level of intellectual disability was as follows: mild (8%), moderate (14%), severe (27%), and profound (52%). At the start of the study, their average age was 35 years ($SD = 12$ years), with a range of from 14 to 68 years. Their average length of institutionalisation was 20 years.

When the 66 participants included in the study were compared with those 29 who were not included, the two groups

did not differ from each other in age, sex, length of institutionalisation, or level of disability. Between male and female participants, there were no differences in age $t(64) = -1.36, p = 0.17$, or degree of disability, $t(64) = 1.49, p = 0.14$. People with mild/moderate, severe, or profound disabilities did not differ from each other by age, $F(2, 63) = 2.18, p = 0.12$. However, there was a significant positive correlation between the age of the resident and his or her level of adaptive skills in all seven measurements of adaptive behaviour.

Settings

Institution.

The Nastola Care Home was a residential institution for about 100 residents. It was owned by a federation of municipalities that organised services for people with intellectual disability. This federation had a larger, central residential institution about 100 kilometres away from the Nastola Care Home.

The Nastola Care Home was a two-story stone building. Originally there had been two wards of 50 residents each, one on the ground floor and one on the second floor. Both floors were later divided into two wards with about 20 residents each, with four to five beds provided in each bedroom. The fifth unit, reserved for people with milder disabilities, operated in a row house located next to the institution's main building. The institution had 60 direct-care workers under the supervision of a head nurse, and the resident-to-staff

ratio was 1.7:1. Additionally, there were 15 workers in the kitchen, laundry, sewing department, furnace room, and office. Day activities were organised by five recreational therapists and one teacher. One third of the residents went to a sheltered workshop on a daily basis.

The distant location of the Nastola Care Home from the central institution made it difficult for the professionals to provide services to this separate unit. Some of the measurements made in this study revealed that considerable problems existed in the Nastola Care Home. For instance, the measurement of adaptive behaviour of the residents (using the AAMD Adaptive Behavior Scale, Nihira, Foster, Shelhaas & Leland, 1974) showed that self-injurious behaviour was observed among 45% of the residents.

The Nastola Care Home was a former tuberculosis sanatorium and the premises were rented from the state. This made it easier for the federation of municipalities to make the decision to close it and replace it by small community-based group homes, by terminating the lease with the state.

Group homes.

The group homes that replaced the institution were built to resemble ordinary single family homes, and they were located in mainstream residential areas. Each house of 200 m² was meant for five residents, all of whom received a room of their own. Group home settings consisted of three houses built

around a common yard, making it possible to share a common night staff. There were six such settings, and they were dispersed throughout a geographic area, at a distance of 1 to 40 kilometres away from the closed institution.

Residents were placed into the group homes on the basis of their own and their families' preferences. This was in contrast to the grouping principles of the institution, where groups were formed on the basis of level and types of disability. The total number of direct care staff in the group homes rose to 84, when 15 posts in the centralized services of the institution were changed to direct care work, and nine new posts were added.

Procedure

Improvement of care in the institution. During the last three years before the closing of the institution, a process aimed at improving the level of institutional care took place. The previously large institutional wards were divided into smaller units with a staff of their own. Thus, the responsibilities of the care staff became more individualised. The four large wards were gradually divided into smaller ones, so that two wards were divided into three and four subgroups, about two to three years before institutional closure, and the other two wards were divided into three and four groups one year before closure. These subgroups, however, were not fully able to function independently

from each other because of the structure of the space.

Intensive staff training began two years before the closure, in order to develop a higher standard of care and to prepare staff for the move. The content of this staff training focused on the principle of normalization, environmental therapy, ways to activate residents with severe and profound disabilities, cooperation at work, and various leadership skills. The least skilled part of the staff also received basic training on the care and education of people with intellectual disability.

The moving process.

In order to minimize the disruption of social ties during the move, new residential groups with their own staff were formed inside the institution six months prior to moving out, by reorganizing the living units according to the new housing arrangements. The institution was closed over a period of one month, with everyone moving out during May, 1989.

Data collection

Adaptive behaviour.

The development of the adaptive behaviour of the participants was followed using the AAMD Adaptive Behavior Scale or ABS (Nihira, et al., 1974). Part One of this scale measured adaptive skills and consisted of 272 items divided into 10 domains. Part Two was a measure of maladaptive behaviour and the use of medication,

and consisted of 265 items divided into 14 domains. Psychometric properties of the Finnish translation of the ABS were previously studied. Interrater reliability of Part One was 0.97 and Part Two, 0.53. Consistency, as measured using Cronbach's alpha, was 0.99 in Part One and 0.95 in Part Two. Stability of Part One was 1.00 and of Part Two, 0.95 (Saloviita, 1990).

Measurements were taken seven times: at two and a half years, one and a half years, and at two weeks before the closure of the institution, and two weeks, six months, one year and two years after the residents moved into community settings. Each time, the form was completed by a staff member who best knew the resident. The first measurement was made after the first two wards were divided into smaller ones, and the second measurement occurred before the remaining two wards were divided. The domain sum scores in each form were counted by the researcher, because errors in the forms were frequent. If the form had missing data, completion of the form was requested.

Community participation.

A Community Participation Inventory was constructed to measure various community contacts of the residents. The inventory listed 16 different activities in the community outside the residence. Frequencies of participation in each activity were counted. The activities were: participation in cycling,

swimming, or other sports outside the residence, use of public transportation, visiting to a friend, shopping, studying, movies, theatre, library, restaurants, post office, religious meeting, hairdresser, doctor, or other places outside the residence.

Care staff completed the inventory for every resident over the same one-month period, during the month of November. This occurred two years before the move, and half a year after it. At the time of the measurement inside the institution, only two wards had been divided into small groups. Psychometric properties of the inventory were not studied.

Family contacts.

Staff wrote down the visits of parents and the visits of residents to their parents' home during a three-month period, during the same months (August, September, and October). This was done in the year before the move, and in the year after the move. Reciprocal contacts were counted by summing up the visits of residents to parents' homes and the visits of parents to their child's place of residence. At the time of this measurement, all wards of the institution were already divided into small groups. These data were obtained for 65 participants. Psychometric information concerning this measurement was not collected.

Daily Care Practices.

Daily care practices were measured using the Child Management Scale (CMS)

developed by King, Raynes and Tizard (1971). This 30-item scale, shortened here to 29 items, measured resident-oriented care practices in contrast to institution-oriented care practices. This scale is organised along four dimensions: rigidity of routine, block treatment, depersonalisation, and social distance.

Scores of CMS could range from 0 to 58, with higher scores indicating more institution-oriented practices. An example of the items and their scoring is given with item 18: "Where do they keep their daily clothes?" The item was scored zero if clothes were in private provision. It was scored one if they were in shared provision and supplied weekly, and it was scored two if they were in communal provision and shared daily. The construct validity of the CMS has been confirmed in several studies (McCormick, Balla & Zigler, 1975; Raynes, Pratt & Roses, 1979). The scale was scored using interviews and direct observation. The research assistant interviewed head nurses, and observed each unit for one day from 7 to 9 am, and from 12 to 1 pm. In the institution, measurements were made two years before the move, and in the group homes one year after the move. At the time of the measurement in the institution, there was only one ward that had been functioning as a divided ward working in smaller subgroups for a period of time. The results were analysed using the SPSS 10.0 Statistical Package.

The dependent variables were assessed very formally and in detail. This made it less likely that a possible positive bias on the part of the informers, a kind of Hawthorne effect, would have distorted the results of the study.

Results

Adaptive behaviour.

By using polynomial contrasts in the repeated measures analysis of variance, it is possible to test the linearity of results. The GLM repeated measures analysis of variance using polynomial contrast showed a statistically significant linear effect in the ABS Part One (adaptive behaviour) scores across all seven successive measurements, $F(1,65) = 14.38, p = .000$. A linear effect was also statistically significant in the ABS Part Two (maladaptive behaviour) scores, but these results were best explained by a quadratic effect, $F(1,65) = 10.78, p = .002$. As Figure 1 shows, the ABS Part One (adaptive behaviour) scores consistently increased. The ABS Part Two (maladaptive behaviour) scores decreased initially, but after the move the development was more complicated. When the first and last measurements before the move were compared, an increase in adaptive skills (ABS Part One), $t(65) = -2.04, p = .046$, and a decrease of maladaptive behaviour (ABS Part Two), $t(65) = 4.17, p = .000$ were observed. When the last measurements before the move were compared with the last measurements after the move, an increase in

adaptive skills (ABS Part One) was observed, $t(65) = -2.72, p = .008$, but there was no change in maladaptive behaviour (ABS Part Two) after the move, $t(65) = -.912, p = .365$.

Separate analyses were made on changes in adaptive behaviour among residents with mild to moderate disabilities ($n = 14$), severe disabilities ($n = 18$), and profound disabilities ($n = 34$). Paired comparisons made between the first and last measurements in the institution showed that ABS Part One scores increased only among residents with mild to moderate disabilities, $t(13) = -.24, p = .030$, but not among residents with severe or profound disabilities. Paired comparisons made between the last measurement in the institution and the last measurement in the group homes showed statistically significant increases in ABS Part One scores only among residents with profound disabilities, $t(33) = -.204, p = .049$.

Similar analyses on ABS Part Two scores showed that maladaptive behaviour decreased in the institution among residents with severe disabilities, $t(17) = 3.34, p = .004$, and profound disabilities, $t(33) = 4.57, p = .000$, but not among residents with mild or moderate disabilities. In the group homes, no significant changes in maladaptive behaviour were observed at any level of disability.

Male and female participants differed from each other in that increase of

adaptive skills in the institution was observed only among male participants, $t(33) = -2.41, p = .022$, and decrease of maladaptive behaviour in the institution only among female participants, $t(31) = 4.88, p = .000$. In group homes, increase of adaptive behaviour was again observed only among male participants, $t(33) = -2.56, p = .015$, and decrease of maladaptive behaviour only among female participants, $t(31) = -2.01, p = .035$.

Younger participants (ages 14-33, $n = 33$) and older participants (ages 34-68, $n = 33$) also differed from each other in their development of adaptive behaviour. In the institution, only the older group manifested statistically significant increase in adaptive skills, $t(32) = -2.69, p = .011$ and decrease of maladaptive behaviour, $t(32) = 3.12, p = .004$. In the group homes, the increase of adaptive behaviour was statistically significant only in the younger group, $t(32) = -2.08, p = .045$.

Community participation.

Community contacts of the residents increased 87% after the move from the institution to the community group homes (Table 1). In the institution, 20% of the residents were without any contact in the community during the study period. In the group homes, only 2% were without any contact. The greatest change in community contact happened among people with profound intellectual disability, whose contacts increased by 356%. The increase in

community contact was statistically significant only among older participants in the age range between 34 - 68 years.

Community participation was correlated with the level of adaptive skills (ABS Part One) both in the institution, $r = 0.66, p = 0.000$, and in the group homes, $r = 0.52, p = 0.000$, but not with the level of maladaptive behaviour (ABS Part Two) in the institution, $r = -0.14, p = 0.305$ or in group homes, $r = -0.09, p = 0.455$. Community participation was not correlated with family contacts in the institution, $r = 0.24, p = 0.065$, but these variables were correlated in the group homes, $r = 0.36, p = 0.003$.

The most common forms of community participation in the institution were those of going outside the institution into study groups for people with intellectual disability (56 times), followed by sports (51 times), and shopping (44 times). In the group homes, the most frequent activities were visits to a friend (123 times), shopping (95 times), going to restaurants (62 times), study groups (55 times), cycling (48 times), and use of public transportation (46 times). Statistically significant increases in activity after the move were noted in activities concerning shopping, movies, theatre, other sports, library, public transportation, post office, visiting a friend, and religious meetings. Among people with profound disabilities, the greatest increases occurred in shopping and visits to a friend. The amount of

specific community contact, however, remained small even though the living situation was in a community. Residents with profound disabilities had 0.3 shopping visits and 0.7 visits to a friend per month in the institution, but these visits only increased to 1.0 shopping visits and 1.7 visits to a friend in the community setting.

Family contacts.

The average number of reciprocal visits during the studied three month period was 2.0 in the institution and 3.3 in the group homes, indicating an increase of 70% in visits with a statistical significance of $t(64) = -3.53, p = 0.001$ (Table 2). There was an increase both in the family visits, or visits of the parents to their child, and in the home visits, or the visits of the residents to their parents. An increase in family contacts was observed for all age groups. The increase was most notable among participants with milder disabilities. In the institution, 36% of the residents, and in the group homes, 30% of the residents, had no contact with their families during the three-month study period. Family contacts were not correlated with adaptive behaviour of the participants either in the institution, or in the group homes. Younger participants had more contact with their families both in the institution, $r = -0.36, p = 0.003$, and in the group homes, $r = -0.29, p = -0.29, p = 0.18$.

Daily Care Practices.

The scores of the CMS in the institution were 0, 10, 21, 24, and 27 consecutively, by ward. The lowest scores were obtained from a small unit (score of 0) and from a unit that was already divided into small groups (score of 10). The average overall score in the institution was 16.4. The scores in the new group homes ranged between 0 and 9, with the average being 2.4. Thus, the average for the group homes was only 15% of the average for the institution. The greatest decreases in the scores of the CMS occurred in the dimension of "social distance", where the scores in the group homes were only 5% of that in the institution, and in "depersonalisation", where group homes scored only 9% of the level in the institution. In the dimensions of "rigidity of routines" and "block treatment", the averages for group homes were 26% of the average scores for institutional wards. The difference between the scores in the institution and group homes was statistically significant, $Z = -2.23, p = .026$.

Discussion

The results of this study demonstrate several positive changes during the deinstitutionalisation process. The results show, first, that institutional reform, where large institutional wards were divided into small groups and intensive staff training was provided, was associated with significant positive

changes in the behaviour of the residents. This was manifested both in an increase in personal independence, and in a decrease of challenging behaviour. Second, the subsequent move into the community was associated with additional gains in the personal independence of the residents, while the level of challenging behaviour remained constant or slightly increased.

Adaptive behaviour changes after a move into the community from an institution may be dependent on the restrictive nature of the previous institutional environment. Conroy, Efthimiou and Lemanowicz (1982) reported positive partial correlations between adaptive behaviour gains after deinstitutionalisation and the lower level of restrictiveness of the previous institutional environment when the level of adaptive behaviour in an institution was controlled. Hemming, Lavender and Pill (1981) observed that higher ability residents from restrictive institutional wards improved with regard to adaptive behaviour after moving to smaller units, while no significant changes occurred among higher ability residents moving from non-restrictive or "free" wards. In the present study, no statistically significant changes in adaptive skills were observed among higher ability residents who moved out. However, their adaptive skills improved in the institution during the process of institutional reform. As was the case in the Hemming, Lavender and Pill (1981) study, it may be possible that, following

improvements in the institution, community life no longer provided new incentives for developmental growth to those with higher abilities involved in the move. However, it provided these incentives to those with lower abilities, who possibly benefited from more individualised care practices in the community as well as from greatly increased levels of community participation. The mediating factors between environmental change and adaptive behaviour gains remained, nevertheless, out of the range of this study.

Reforms within residential institutions have changed these places from what they used to be; as a consequence, life in a reformed 'institution', in some occasions, may no longer differ so much from life in 'the community' (Emerson & Hatton, 1994). Nevertheless, the present study demonstrated that even after comprehensive institutional reform, where unit sizes were made comparable to those in subsequent group homes, the community environment was still able to witness development in the adaptive behaviour of the residents.

While the development of adaptive skills was linear, the development of challenging behaviour showed quadratic tendencies. Challenging behaviour decreased in the institution, but no changes were observed after the move into group homes. Studies on deinstitutionalisation have previously indicated variable results concerning the develop-

ment of challenging behaviour (Emerson & Hatton, 1994; Larson & Lakin, 1989; Young et al., 1998). Emerson and Hatton (1994), in their review of research, noted that deinstitutionalisation typically did not lead to reductions in challenging behaviour. They proposed that the enriched environments in community may provide greater opportunities for destructive behaviour. A move to more enriched environments may also be associated with greater demands and expectations concerning the behaviour of the residents. This, in turn, provides increased occasions for negative reinforcement to happen through escape from demands via challenging behaviour (e.g. Iwata, 1987).

The changes in community participation and family contacts, indicating increased levels of participation and contacts after the move to community, are in accordance with previous research (Emerson & Hatton, 1996; Stancliffe & Lakin, 1998; Young et al., 1998). Total changes in both dimensions saw a large percentage of increase. However, the increase in community participation greatly varied across age and level of disability, with an increase in community contacts mainly for those with profound disability and among older residents with higher adaptive skills, and with an increase in family contacts only for those with a disability in the mild to severe range. Additionally, the level of participation remained quite low in absolute terms. In contrast to the institution, the care staff in the

community setting was seemingly able to better include adult residents with profound disabilities into various activities in the community environment. But, the high correlation between community participation and adaptive behaviour indicated that problems, especially in participation of the lower functioning residents, still needed to be addressed.

The development of daily care practices, measured two years before and one year after the move with CMS, showed dramatic changes. The institution-oriented care practices were almost totally changed to individual-oriented care. The change was evident in all four dimensions of the CMS, but was most striking in the dimensions of "social distance", and "depersonalisation". For example, the residents were helped individually in the group homes instead of through the block treatment that was previously used in the institution. They owned their own clothes, instead of sharing clothes from the closets of the institution, and they prepared and ate lunch together with staff instead of being served and supervised. This change was the more impressive because both the staff and the residents were the same as before.

A limitation in the present study should be noted. The research design did not incorporate a control or contrast group. Therefore, one cannot be sure that the changes reported can be attributed to a process of deinstitutionalisation. Alter-

native explanations, such as effects of aging on residents, cannot be fully ruled out. Another methodological note can be made on the measurement of adaptive behaviour. In this study, the 1974 version of the AAMD Adaptive Behavior Scale was used. This scale was difficult to administer because it was very long and because the scoring was complicated. Hatton et al. (2001) have recently demonstrated that the short form developed from the ABS-RC 2 version of this scale has good psychometric properties. There is clearly a need for less cumbersome instruments for this type of study in the future.

The results that were obtained are generally in accordance with previous research on deinstitutionalisation. Kim, Larson, and Lakin (2001) summarise the results of U.S. studies on adaptive behaviour changes between 1980 and 1999 as follows: "the evidence in regard to adaptive behaviour and challenging behaviour, as measured by standardised instruments, suggests that community settings produce improved adaptive behaviour, and are at least as effective as institutions in addressing challenging behaviour for people who have moved". When the analysis in this study was refined across age, sex and level of disability, some interesting new findings emerged which indicated different outcomes on adaptive behaviour, and also on community participation and family contacts for different subgroups. These differences may be worth further studying because they

may suggest possible mediating factors that would affect the quality of care.

The results of this study revealed several positive changes associated with the move from the institution to community group homes. Improvements were obtained in the community even after the reform in the institution had redressed grievances about institutional life. This is not to say that community-based group homes would be fully meeting the needs of the service users. After all, there is still a long way to go from group home environments to supported living in one's own home. There also remains a continuous need to evaluate the quality of care provided in various community options.

The assiduous work of researchers in verifying the effects of deinstitutionalisation may remind some of the terrible adventure of Don Quixote with the windmills. What this type of research is deconstructing is the professional belief in the "need for institutional care". However, it could be asked whether this belief only exists as a side-effect of the policy of institutionalisation, which, on its part, depends more on the political priorities of society than on professional knowledge itself. It also would seem reasonable to suggest that the burden of proof concerning the best living conditions for people with intellectual disabilities should belong to those who recommend solutions that deviate from normal living standards. It might be argued that poor living conditions in institutions among people with intellectual

disabilities, such as overcrowding, understaffing, segregation, or inadequate care should be corrected in themselves, without a need to refer to sophisticated studies on adaptive behaviour or quality of life. Even if this all were true, large institutions continue their existence in many countries, including in Finland. In these countries there still continues to be professional debate around the benefits and disadvantages of deinstitutionalisation. In this discussion, the results from the closure of the Nastola Care Home, although not based on completely new data, represent the findings from the largest single deinstitutionalisation process in Finland thus far.

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Table 1.
Average number of community contacts during a one-month period (October), in an institution and in group homes for the same residents.

	n	Place		t-value	p
		Institution	Group home		
All	59	5.1	9.5	-4.28	0.000***
Level of disability					
mild to moderate	13	7.5	15.5	-2.2	0.048*
severe	17	9.1	11.2	-1.29	0.215 n.s.
profound	29	1.6	5.8	-4.86	0.000***
Age group					
14 - 33 years	30	5.7	7.6	-1.73	0.094 n.s.
34 - 68 years	29	4.5	11.3	-4.27	0.000***

* = $p < 0.05$, *** = $p < 0.001$, n.s. = not statistically significant

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Table 2.
Average family contact during a three-month period (August to October) in an institution and later in group homes for the same residents.

	n	Place		t-value	p
		Institution	Group home		
Reciprocal visits	65	1.95	3.32	-3.53	0.001***
Family visits only	65	1.51	2.52	-3.06	0.003**
Home visits only	65	0.45	0.8	-2.67	0.010*
Level of disability					
mild to moderate	14	2.07	4.86	-2.51	0.026*
severe	17	3.24	5.59	-2.42	0.028*
profound	34	1.26	1.56	-0.13	0.209 n.s.
Age group					
14 - 33	33	2.64	4.09	-2.53	0.017*
34 - 68	32	1.25	2.53	-2.44	0.021*

* = $p < 0.05$, ** = $p > 0.01$, *** = $p < 0.001$, n.s. = not statistically significant

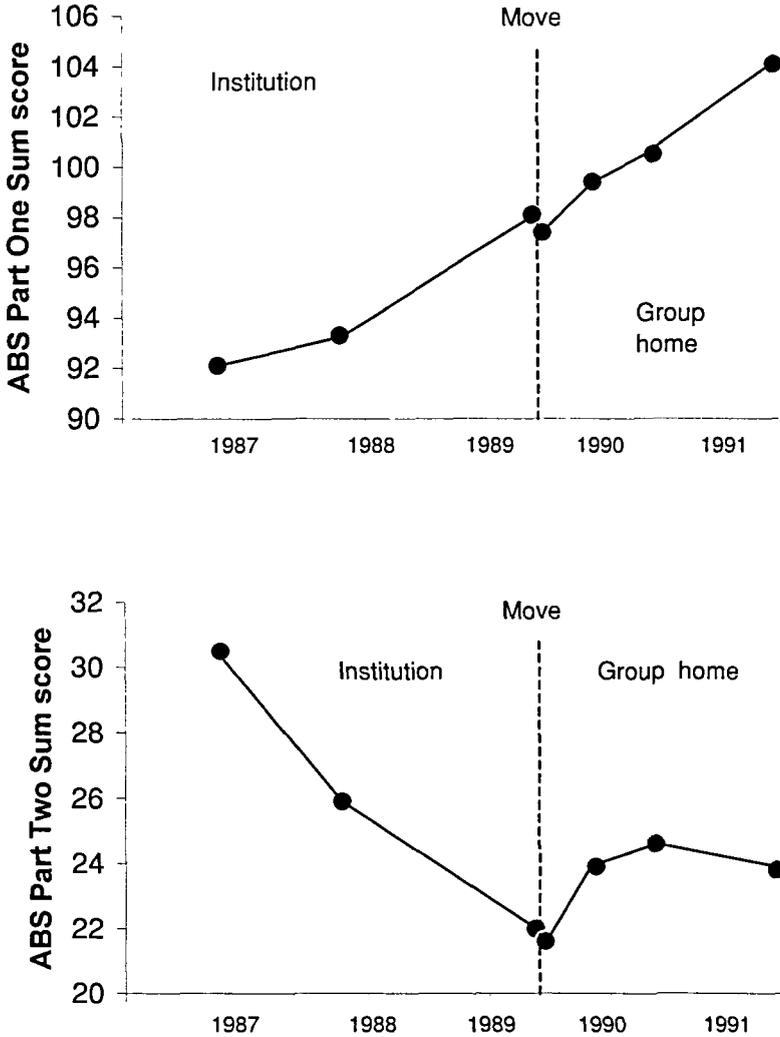


Figure 1. The development of adaptive behaviour and challenging behaviour of people with intellectual disability (n = 66) in an institution, where unitisation and staff development were occurring, and in small community group homes after the closure of the institution.

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