

# Technical support and home adaptation for the elderly needing care in Barcelona

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## Enhancing the quality of life for people over 65

- In 2011 the Social Services of the Barcelona City Council, in collaboration with the Independent Living Association ([www.cvi-bcn.org](http://www.cvi-bcn.org)), launched a programme aimed at enhancing the quality of life for people over 65, especially aimed at **those who have telecare service and are living alone**.
- Through **personalized assessment**, the programme has introduced and funded technical support products or home repairs, in order to **increase personal autonomy**, to keep people active and to prevent security risks in daily life activities.
- The motivation is **to help people continue living at home** with the highest quality of life and to reduce the number of accidents at home.

## Our analysis

- Does the programme work? We want to analyze if it really increases the autonomy and security at home of elderly people.
- Does the programme satisfy the beneficiaries? We want to analyze if the programme has enhanced the perceived quality of life of the participants.
- Does the programme save money? We want to analyze if the cost of the programme is lower than that resulting from the recognition of a moderate level of dependency funded by the public system.

# Programme Description

- A group of **911 beneficiaries** were selected by the Social Services of the Barcelona City Council.
- Beneficiaries were **people over 65**, with **low income level**, **living alone** and with **a telecare service**.
- The programme starts with a **personalized assessment**, which evaluates each person's situation and the elements that can actually fit better in their home and situation.
- The programme does not make simplistic proposals for action and **ensures a better adaptation** to the particular needs of assistance for beneficiaries.

## Socio-demographic profile: Age and gender

	Men	Women	Total	
65-69	2	4	6	(0.7%)
70-74	1	40	41	(4.5%)
75-79	22	201	223	(24.5%)
80-84	42	347	389	(42.7%)
85-89	22	195	217	(23.8%)
90-94	3	14	17	(1.9%)
95 and above	0	10	10	(1.1%)
Non-response	3	5	8	(0.9%)
Total	95	816	911	
	10.4%	89.6%	100%	

## Socio-demographic profile: Transportation 'Pink Card' (as a proxy for income level)

Available to Barcelona residents aged 60 and over (or disabled people) with low income levels.

	Men	Women	Total
Free rate	22.10%	41.34%	39.34%
Low rate	38.94%	33.37%	33.95%
Unrequested	10.52%	11.77%	11.64%
Non-eligible	4.21%	2.33%	2.52%
Non-response	24.21%	11.16%	12.52%
	100%	100%	100%

## Socio-demographic profile: Companionship situation

	Men	Women	Total
Living alone	75.79%	94.36%	92.42%
With other	23.16%	3.92%	5.92%
Non-response	1.05%	1.71%	1.64%
	100%	100%	100%



## Socio-demographic profile: Summing up

- 89.6% of beneficiaries are women.
- 66.5% aged between 80 and 89 years old.
- 74% with low income level.
- 92.4% living alone.

## Limitations on the autonomy: Dependence status

- 95% of beneficiaries are independent people with difficulties.
- Most have a very slight degree of dependence but probably will get worse given their age.
- These people begin to have difficulties to perform daily life activities and for them the programme will delay the onset of dependence.
- 4.5% of beneficiaries are dependent or partially dependent.

## Limitations on the autonomy: Mobility restrictions

- 37.5% of the beneficiaries claim to be autonomous to move around their home and 54.5% require mobility aid (cane, crutch or similar).
- 9.8% of beneficiaries claim they walk at home holding on to furniture and walls. 7.2% never uses any mobility aid (such as walkers, canes, crutches,...) although they walk around holding on to furniture and walls.
- 41% of the beneficiaries require aid for transfers. This means they need help to move between fixed elements such as chairs or seats, or either to get in or out of bed.
- 58.1% of the beneficiaries have difficulty using the arms, and 73.3% have difficulty in using the legs. More than a third of beneficiaries have problems using both, arms and legs.

## Limitations on the autonomy: DLA restrictions

- 4.2% have trouble for eating independently.
- 62.4% have trouble for dressing. More than 27% have difficulty in moving arms and legs for getting dressed without help.
- 97.3% have the telecare service.
- 46.2% need help to get into the bathtub. 8.7% need help to bathe and 35.4% suffer slips in the tub.
- 11.4% have difficulty to move into the shower, and 8.3% need help with showering. 31% suffer slips in the shower and 36% have trouble to stand when showering.
- 76% have problems to get on or off the toilet and 26% have trouble using the toilet. 55% just have difficulty getting on or off the toilet but not using it.

# Technical support (I)

## ● Body Hygiene Aids

- WC:
  - Grab bars,
  - Raised toilet seats (with or without arms).
- Bathtub:
  - Grab bars,
  - Bath boards,
  - Swivel bath seats.
- Shower:
  - Grab bars,
  - Shower seats and benches,
  - Folding shower seats,
  - Shower seats with wheels.
- Grooming and hygiene aids:
  - Long handle brushes and combs,
  - Towels for toes and back,
  - Roll on lotion applicators.

# Technical support (II)

## ● Kitchen, Dining and Dressing Aids

- Kitchen:
  - Food preparation boards,
  - Jar openers,
  - Tin & can openers,
  - Pan handle holders,
  - Adapted drinking cups.
- Dining:
  - Bowls & plates with high sides,
  - Slip-resistant nettings and mats.
- Dressing:
  - Long shoe horns,
  - Sock aids.

# Technical support (III)

## ● Functional Improvement

- Mobility:
  - Walkers,
  - Ramps,
  - Banisters & Handles,
  - Long handled reachers,
  - Multi-function chairs.
- Transfers:
  - Transfer discs,
  - Bed, chair & couch raisers,
  - Mobile lifts,
  - Articulated beds (with and without lift),
  - Viscoelastic mattresses,
  - Cushions.
- Communication:
  - Big buttons and photo phones (mobile & cordless phones),
  - Senior-friendly TV remote control.
- Safety:
  - Doorbell amplifiers.

## Technical support: Tech aids by type and gender

	Men	Women	Total
Mobility	85.26%	93.38%	92.54%
Grab Bars	84.21%	81.86%	82.11%
Hygiene	48.42%	73.53%	70.91%
Dressing	65.26%	69.61%	69.15%
Transfers	71.58%	59.80%	61.03%
Kitchen	40.00%	55.39%	53.79%
Shower	50.53%	53.80%	53.46%
WC	50.53%	47.43%	47.75%
Communication	23.16%	25.86%	25.58%
Bathtub	27.37%	21.69%	22.28%
Dining	22.11%	18.63%	18.99%
Safety	3.16%	4.17%	4.06%



## Arrangements: Home adaptation

	Men	Women	Total
Replacing bathtub with a shower	90.32%	81.30%	82.38%
Replacing shower floor	0.00%	10.43%	9.20%
Lowering shower floor	0.00%	5.22%	4.60%
Other (toilet, kitchen,...)	9.68%	3.04%	3.83%

## Arrangements: Works at home by gender

	Men	Women	Total
With works	30.53%	28.43%	28.65%
Without works	69.47%	71.56%	71.35%
	100.00%	100.00%	100.00%

## Technical support and arrangements at home: Summing up

- Nearly 2000 items were provided to improve the mobility and transfers of beneficiaries. More than 1700 tools were provided related to hygiene and toilet use.
- 92% of participants received at least one element related to the improvement of their mobility.
- 82% placement of grab bars.
- 71% obtained items for hygiene or for using the toilet.
- 69% received tools to help dressing
- 61% received aids for transfers.
- More than a half of the beneficiaries of the programme received gadgets for the kitchen and for the shower.
- 71% of the required actions have not carried out works at the home of the beneficiaries.

## Cost of the programme

- The total investment of the programme of technical support and home adaptation was approximately **1.3 million €**, taking into account that 71.35% of beneficiaries only received technical aids and in 28.65% of cases works were carried out at home.
- The average cost per beneficiary was **933.5 €** for just providing technical aids to beneficiaries.
- The average cost per beneficiary was **2712.5 €** if works at the beneficiary's home were required.

# Satisfaction Survey Description

- The interviews are carried out at least six weeks after implementation of each individual's support programme case.
- Beneficiaries can express their satisfaction with one or more of the following components after the arrangements:
  1. If they feel more autonomous,
  2. If they feel safer,
  3. If their day-to-day has changed,
  4. If the works or actions caused discomfort, and finally,
  5. If they would have been able to make the improvements by themselves without the benefits of the City Council programme.
- The answer may be yes/no in more than one option.

# Satisfaction Survey Results

	Men	Women	Total
More autonomous	94.6%	97,8%	97,4%
Safer	94.6%	97.7%	97.3%
Day-to-day changes	95.7%	98,4%	98,1%
Discomfort	3.4%	2.7%	2,7%
Arrangements by themselves	11.5%	13,1%	13.0%

## Expected economic impact: Hypothesis

- The positive effects stated by the beneficiaries of the aids on their security, quality of life and autonomy to perform daily life activities.
- The actions taken (technical aids and/or works at home) delay the entry of the individual in higher levels of dependence severity.
- The estimated rates of prevalence for each severity level of dependence for a range of ages are the same in the next range if a prevention programme is implemented.
- The estimated rates of prevalence were obtained using data taken from a large scale survey conducted in 2008 by the Spanish Institute of Statistics (INE, Instituto Nacional de Estadística) and called EDAD, which stands for Survey of Disabilities, personal Autonomy and situations of Dependence.

Details can be found in Bolancé et al. (2010).

## Expected economic impact: Hypothesis

### Cost of care per severity level Combined home and external care service

Severity level	Type of care	Yearly cost
Degree 1	3h/day home care	13917.45€
Degree 2	Day centre and 1h/day home care	12512.47€
Degree 3	Residential care	17295.60€

Source: Ayuso, M. & M. Guillén (2011)



# Expected economic impact: Results

Estimated prevalence rates of dependence  
for each severity level by age intervals

	65 - 74 (n=47)		75 - 84 (n=612)		85 or above (n=244)	
	Without programme	With programme	Without programme	With programme	Without programme	With programme
Degree 0	0.579	0.694	0.389	0.579	0.261	0.389
Degree 1	0.200	0.165	0.202	0.200	0.204	0.202
Degree 2	0.116	0.079	0.169	0.116	0.246	0.169
Degree 3	0.104	0.062	0.240	0.104	0.553	0.240
Expected annual cost	284,140.63€ (a)	272,570.76€ (b)	5,558,782.81€ (c)	4,583,102.04€ (d)	3,778,235.20€ (e)	2,568,383.51€ (f)

Total Expected annual cost in LTC without programme (a) + (c) + (e)	9,621,158.64€
Total Expected annual cost in LTC with programme (b) + (d) + (f)	7,424,056.32€
Expected Savings	2,197,102.31€
Programme Investment (tech aids & home adaptation)	1,303,194.70€
Return (savings/investment)	1.69

## Conclusions

- The programme is clearly preventive. For every unit euro invested in the programme, savings are about 1.7 euros in terms of long-term care cost saved due to increased quality of life.
- Our data show that the programme personalizes actions to each individual case and it ensures an optimal adaptation to serve the needs of most particular beneficiaries.
- 71% of the required actions have not carried out works at the home.
- The programme has a very high satisfaction rating: improved quality of life (97%), increased safety (97%), perceived improvement by the beneficiary (98%) and absence of discomfort incurred (97%).
- Beneficiaries state they could not have performed the actions by themselves and, unexpectedly, most of them did not know about the existence of some modern technical and simple mechanical aids that can be found in the market.

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