The Smart Homes Program
A Formative Evaluation

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Abstract

Background

'JDC Israel unlimited' and the Israel National Digital Agency at the Ministry for Social Equality, in partnership with the Ministry of Welfare and Social Affairs, the Ministry of Health, the Ministry of Education, the Ministry of Finance, and the Ruderman Family Foundation, initiated the Smart Homes program. The program seeks to adapt and integrate advanced technological solutions for people with all types of disabilities in their living environment and thereby promote their autonomy and independence in various areas of life. This is done based on a person-centered service approach and through a service combining human and digital aspects that is to be incorporated by the government. The pre-pilot program and pilot program were operated by Beit Issie Shapiro, using the Atvisor digital platform for matching the best suited technological solutions to individual needs, capabilities and preferences. The Myers-JDC-Brookdale Institute conducted a formative evaluation study of all stages of the program.

The Formative Evaluation Goals

The goals of the formative evaluation were: (1) to examine changes in the quality of life, the sense of autonomy and independence, and the safety of the program participants; (2) to examine the integration process and the frequency of use of the technological solutions provided by the program; (3) to examine to what extent the recommendations for private purchase of technological solutions have been implemented and the frequency of use of privately purchased technological solutions; (4) to examine the impact of the use of the technological solutions on the surroundings of the participants and their caregivers, whether family members or professional care providers; (5) to examine the gaps and barriers involved in the implementation of the program as well as the factors supporting its ongoing implementation; (6) to examine the participants' satisfaction with the various stages and aspects of the program.

Method of Evaluation

The evaluation included three elements: **(1) literature review** of the integration of technological solutions for improving the quality of life of people with disabilities in selected countries (see Pur et al., 2020); **(2) evaluation of the pre-pilot program** and formulation of recommendations ahead of the implementation of the pilot program; **(3) evaluation of the pilot program** and formulation of recommendations ahead of the program integration by

the government. The present report is focused on the third element – the evaluation of the pilot program – with reference to some of the findings and conclusions of the first two elements.

The evaluation of the pilot program was based on a research design that included several elements: (1) self-administered questionnaires that were sent to the participants before and after the purchase of a technological solution (40 respondents, in total); (2) home visits to 35 participants for whom a technological solution was purchased by the program, in the course of which observation of the use of the solution was conducted, a structured questionnaire was filled out by the participant, and a dedicated structured questionnaire was filled out by the accompanying caregiver (in relevant cases); (3) analysis of administrative data related to the program; (4) semi-structured interviews with 6 participants or accompanying caregivers who dropped out of the program.

Key Findings

The participants reported high satisfaction with various aspects of the program, including: the ease of use of the digital platform (83%); the evaluation of the participant's needs and the matching of the best suited technological solution to individual needs (91%); the waiting time for the provision of the technological solution (86%); the guidance provided upon provision of the technological solution (97%) and the contact with the supplier (92%). The respondents were reportedly satisfied especially with the personal approach and expertise of the professionals in charge of matching the technology to individual needs.

Other aspects of the program related to the matching and provision process were not implemented as planned or were not implemented to the respondents' satisfaction. In particular, a relatively low level of satisfaction was reported with regard to the functionality of the solutions (65%), and complaints were raised about malfunctions in 41% of the solutions (in half of them, recurrent malfunctions). Also, only few of the respondents (just 5 respondents) implemented the recommendations for private purchase of technological solutions. Finally, interest was expressed in additional technological solutions and in the expansion or more efficient use of the budget allocated to each participant.

The participants received two technological solutions each on average; 79% of the solutions were universal solutions designed for the general public. The study showed high rates of satisfaction with the safety of the solutions (98%), their size and appearance (94%), their adaptation to the home and environmental settings (93%), and their ease of use (90%).

It was found that the use of the solutions when needed was remarkably high (93% of the solutions; 94% of

participants using the solutions). 94% of the participants had no difficulty or only a slight difficulty getting used to the solutions provided by the program (where a negative correlation was found between the participant's positive attitude about technology and the difficulty getting used to the solution). The respondents reportedly received extensive support and assistance while using the solutions (90%) and were able to use the solutions easily, correctly, and safely (90%), and without being embarrassed by others watching them (85%). The observations conducted in the course of the home visits showed that the participants could independently use 91% of the solutions. The interviews conducted with participants who stopped using the technological solution or even returned it showed that the two main reasons for dropping out of the program were: the participant's belief that he had no need for the solution purchased on his behalf and hence, his reluctancy to use the solution as well as difficulty using the solution in the absence of support by the environment.

Significant positive effects were reported following the use of the technological solutions, in particular, the participants' enhanced sense of autonomy and independence (86%) as well as their enhanced self-confidence (87%) and improved quality of life (85%). Comparison of the self-administered questionnaires filled out by the respondents before and after the provision of the technological solutions indicated a significant improvement in their level of independence in the following areas of life: independent functioning at home; going out safely; taking care of medical needs; and the ability to relax and calm down. It should be noted that 89% of the respondents reportedly experienced an improvement in specific areas of life related to the personal goals set for them as part of the program (as perceived by the respondents). Positive effects were also reported by the accompanying caregivers, particularly by the professional caregivers, who noted that thanks to the provided solutions, the participants could cope with less reliance on their assistance. It was also found that in most cases, the accompanying caregivers were less concerned about the safety of the participants while the participants were less dependent on the caregivers thanks to the solutions.

Conclusions and Key Recommendations

The findings show that to a great extent, the program has achieved its goals, in particular, with regard to the personal adaptation and the integration of use of technological solutions for the promotion of autonomy and independence. As for the integration of a technology matching and providing mechanism, the participants reported high satisfaction with most aspects of the program. At the same time, the need to improve or fine-tune some of the program aspects ahead of its integration by the government ministries was also noted. The key aspects of

the program that should be maintained, improved, or reconsidered are thus as follows:

Aspects to be maintained: the variety of ways of joining the program; the personal approach and expertise of the professionals in charge of matching the technology to individual needs; the evaluation of needs and the matching of the technology to individual needs through home visits; the participants' level of involvement; and universal technological solutions.

Aspects to be improved or reconsidered: fine-tuning the personal goals set as part of the program and their communication to the participants; troubleshooting support for the provided technological solutions; guidance for and support in the use of the technological solutions; the budget allocated to each participant and its efficient use; fine-tuning the role definition of the accompanying caregivers; reconsidering the need for the recommendations for private purchase of technological solutions as part of the program.