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Research protocol

Development of a training program to improve the levels of physical exercise of people with intellectual disabilities through the use of exergames and technology (MOVE-IT)

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1. Introduction and background

Intellectual disability is characterized by significant limitations in both intellectual functioning and adaptive behavior expressed in conceptual, social, and practical adaptive skills (Schalock et al. 2010). Although intellectual disability differs from person to person and with age, it is always associated with problems in cognitive abilities. The impact of disability depends not only on health conditions but also, and fundamentally, on the degree to which environmental factors support the person's full participation and inclusion in society (WHO Europe 2020 definition of intellectual disability). Compared to the general population, people with intellectual disabilities are at increased risk of health problems (Balogh et al. 2008), worse coverage of their health care needs and difficulties in finding appropriate health care (Hermans and Evenhuis 2014; Malt et al. 2013). Furthermore, people with intellectual disabilities have lower levels of physical activity compared to the general adult population (Stanish et al. 2019) and have a higher incidence of obesity (Folch et al. 2019; Kinnear et al. 2018). Some estimates establish that 50% of people with intellectual disabilities follow a sedentary lifestyle, presenting a low level of physical activity in 40% of cases (Haveman et al. 2011). Dario et al. (Dario et al. 2016) found that only 9% of people with intellectual disabilities worldwide were able to follow the recommendations on physical activity of the World Health Organization. A sedentary lifestyle and these low levels of physical activity lead to problems that affect their independence (Oviedo and Guerra-balic 2017).

Several barriers have been reported as causes of these low activity levels: the lack of supporting resources, reduced physical and behavioral capacities, and the lack of available programs (Kuijken et al. 2016). In the scientific literature there are several studies focused on identifying possible relevant factors to promote physical activity among people with intellectual disabilities. Among them, predictability in terms of routine and familiarity, communication of the purpose, and pleasant and social activities have been associated with a potential increase in the motivation and participation of people with intellectual disabilities in physical activity (Mahy et al. 2010, Michalsen et al. 2020).

Various alternatives to increase the physical activity levels have been investigated. Among them, exergames, based on the combination of physical activity routines and gamification, have shown promising results in general population. There are several theoretical frameworks to develop exergames that facilitate the creation of game-based exercise routines (Mueller and Mandryk 2016). Currently, virtual reality-based videogames and exergames are widely used by youth. Those solutions offer particularly attractive features for people with intellectual disabilities (Anderson-Hanley et al. 2011). On one side, they allow physical activity to be connected to a videogame or an entertainment system, which could result in an increased motivation and interest, and hence, in a higher compliance with exercise. In addition, some reward strategies such as

positive feedback, medals or prizes, that are frequent used and easy to implement in an exergame, have shown to be a promising alternative to increase people with intellectual disabilities' interest in physical activity (Temple 2009).

Although various studies have investigated the use of videogame-based exergames, finding promising results for people with intellectual disabilities (Rosly et al. 2017; Taylor et al. 2016), most of the available exergames are not easy enough to use nor accessible to consider them suitable for these people. Therefore, the design and development of accessible and easy-to-use exergame solutions is still needed. As an example, the use of touch screen devices such as smartphones, tablets, or iPads require low cognitive demands and they can be used to improve the physical activity adherence (Anzulewicz et al. 2016, Li et al. 2017) and the individual's quality of life (Ghahramani and Wang 2019).

Professionals and family members who assist people with intellectual disabilities do not usually have required knowledge and skills to help/guide them in carrying out physical activity, which is another important barrier. This barrier is even worse when the physical activity is performed using resources such as exergames that are completely unknown for them. In such circumstance, nowadays, these solutions are not commonly recommended by professionals. Some of the reasons for this low recommendation rate are the lack of knowledge on the available exergames, the degree of appropriateness of each alternative for a specific individual or the lack of evidence are some of the factors.

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2. Objectives

The MOVE-IT project aims to design and develop a combined education and intervention program to promote physical activity in people with intellectual disabilities at home, institutions or the community through the use of technological exergames. To achieve this general objective, various research activities, described in this protocol, have been designed. Their specific objectives are detailed below:

- **Specific Objective 1**(SO1): To define the current panorama of the Valencian Community on the use of technologies and physical activity habits among people with intellectual disabilities.
- **Specific Objective 2**(OE2): To understand the current reality of people who support/care for people with intellectual disabilities in terms of their digital health literacy and their use of technologies in the Valencian Community.
- **Specific Objective 3**(OE3): To explore the attitudes and preferences of people with intellectual disabilities in the Valencian Community about the use of motivational and personalization aspects in digital tools to promote physical activity.
- **Specific Objective 4**(SO4): To Identify potential barriers, facilitators, training needs and preferences in supporting the use of technologies to promote physical activity for people who support/care for people with intellectual disabilities in the Valencian Community.

3. Scope

This protocol develops the research activities planned in the MOVE-IT project (funded by the Erasmus+ program of the European Commission). The objective of this program is to support education, training, youth and sport in Europe. In the period 2021-2027, this program places special emphasis on social inclusion, the ecological and digital transitions, and the promotion of the participation of young people in democratic life. In particular, MOVE-IT is framed in the KA220-ADU call "Cooperation of associations in adult education" of 2021.

The following is a brief description of the partners of the consortium that will participate directly in the development of the research activities proposed in this protocol:

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

Polytechnic University of Valencia

The Universitat Politècnica de València (UPV) is an institution that provides a public higher education service through study, teaching and research, as well as the generation, development and dissemination of knowledge at the service of Society and Citizenship. The UPV is the first technological university in Spain according to international rankings (for example, Shanghai Ranking of World Universities). The UPV will lead the study from the ITACA Research Institute, specifically the SABIEN (Technologies for Health and Well-being) research group in which the principal investigator carries out his research activity. SABIEN is the main research group in e-inclusion and e-Health at the UPV, and one of the most relevant at a national level with 25 years of experience.

Valencian Institute of Social Services

The Valencian Institute of Social Services (IVASS) has the nature of a public law entity and its own legal personality, its own assets, resources and full capacity to act for the development of the Generalitat's policy in the field of social welfare, elderly people, dependency , care for people with functional diversity, protection, safeguarding and guardianship positions for people with judicially modified capacity attributed to the Generalitat, childhood and adolescence, and provision, assistance and execution of actions in social services and social-health care.

It has a staff of 800 professionals and provides service to 1,200 users in a network of more than thirty centers that are distributed throughout the three provinces of the Valencian Community.

The mission of IVASS is defined as a public entity whose mission is to provide people with social care needs with the necessary support for their comprehensive development, consolidating a quality service that, in a participatory manner, responds to the needs and demands of the people who are part of your organization or request your services.

4. Population

The research proposed in this protocol follows a participatory approach involving people with mild or moderate intellectual disabilities, their families and the professionals who offer services to these people in the planned activities. Four studies are defined in this protocol. Each study has its specific selection criteria that defines the characteristics of the participants in the proposed activities. IVASS will collaborate with SABIEN (UPV) in the selection and recruitment of potential participants.

5. Benefits and risks

The results of the research activities proposed in this protocol will serve to expand knowledge on needs, especially training and development of digital skills, as well as barriers, facilitators and preferences for the use of digital solutions, in particular exergames, to promote the physical activity among people with intellectual disabilities. This new knowledge will allow extend our understanding of the context on which new support tools must be developed to promote physical activity among people with intellectual disabilities. In this sense, professionals who provide services to these people could use the knowledge generated as guides in the design of interventions to promote physical activity. Besides, this new knowledge could guide the design

of physical activity technological solutions intended for people with intellectual disabilities, particularly exergames.

This study has several limitations such as the bias of the sample, which belongs to a specific geographical area and has specific characteristics determined by the selection criteria. However, due to the type of activities proposed, no risks are foreseen for the participants or as a result of the research.

6. Impact

Participants will not receive a direct benefit from their participation. There will be no remuneration of any kind for the participation.

As a result of the research proposed in this protocol, it is expected to generate new knowledge that will be used for the design and implementation of digital educational resources for the development of skills in support of the promotion of physical activity among people with intellectual disabilities. Particularly, digital health literacy and skills for the application and use of technologies for physical activity will be considered. These educational resources will be intended primarily for professionals who offer services to people with intellectual disabilities and their caregivers/relatives. Among the short-term impacts defined in the MOVE-IT project are the development of activities for the training of professionals, family members and people with intellectual disabilities. These activities will use digital educational resources based on the knowledge generated.

On the other hand, the knowledge generated in these activities will allow to adapt various existing digital solutions to support physical activity for people with intellectual disabilities. People with mild or moderate intellectual disabilities will be able to access these support solutions. This fact could increase their level of physical activity, and hence, it could improve their physical condition, behavioral and emotional symptoms, as well as their level of socialization.

7. Research team

Principal investigator

Dr. Vicente Traver MSC (1998) and Ph.D. (2004) in Telecommunications Engineering from the Universitat Politècnica de València, IEEE-EMBS member. General manager of the UPV-SABIEN innovation group at the ITACA Institute. Member of the Academic Commission of the Interuniversity Master's Degree in Biomedical Engineering of Valencia. Coordinator of the Healthy Living cluster, which combines six different research groups working in the field from different approaches. Since 1998, he has focused his research on eHealth and integrated care,

especially the provision of home health care services through Information and Communications Technology (ICT) and the concept of patient empowerment and of the citizen as co-producer of health. Vicente has participated in more than 65 projects funded by the European Commission (from the IV program to the current Horizon 2020) and by various national organizations and in multiple research contracts with companies, most of them focused on social services and health care using TIC. He has more than 140 scientific publications in national and international journals and has participated in various seminars and conferences as a guest speaker. He is a member of several international scientific congress committees such as IEEE Biomedical Health Informatics 2014. In addition, he is a member of the editorial board of the International Journal of Distributed Sensor Networks. Vicente is co-founder of two SMEs related to digital health. Finally,

Research team

Dr. Antonio Martínez Millana, Doctor in Technologies for Health and Welfare and Assistant Professor Doctor of the Department of Electronic Engineering of the Universitat Politècnica de València. Expert in eHealth and health data analysis. More than 10 years of experience in competitive projects in the European Union, author of more than 30 articles in indexed journals and 50 congresses.

Mrs. María Segura Segura, graduated in Physical Activity and Sports Sciences and in Business Administration and Management from the Universitat Politècnica de València. Specialized in the field of health and physical exercise, she has one year of experience in R&D&I project management.

Dr. Octavio Rivera Romero is Associate Professor at the Universidad de Sevilla and currently visiting professor at the UPV under the funding of the call for "Ayuda para la Recualificación dl profesorado Universitario del Sistema Español". Octavio is member of the “Participatory Health Informatics and Personalization (PHIPE)” research team. He currently develops his teaching and research work at the Computer Engineering School, where he participates in several research projects in the field of Digital Health in collaboration with various international institutions and companies. He is the author of more than 40 articles published in international journals and conferences. He is member of the IMIA Social Media Working Group and an expert in participatory health informatics and user experience.

Mrs. María Sorzano has a degree in Psychology and a Master's degree in health and social care management. She has more than 10 years of experience as a manager of European projects, coordinating and managing European projects. María has experience in monitoring and reporting on European policies in social matters (mainly those related to the field of disability). Maria has experience in developing active networks with other European regions. In addition, she has

proven experience in organizing international seminars, conferences and events at a European level.

Mr. José Gil has a degree in Psychology and a Graduate in Business Administration from the Universtat de València. His main field of work is the implementation of social marketing and corporate social responsibility activities in the field of disability. José regularly collaborates with the Universitat de València and other European organizations in the design and implementation of social marketing campaigns and interventions, stakeholder mapping and educational materials from a stakeholder approach. José Gil has published more than 10 articles on social marketing and corporate social responsibility such as "Training needs assessment of social marketing in the disability field" or the academic article in the Journal of Social marketing (first author) "Bringing social marketing closer to the disability field".

Mrs. Deni Valera has a degree in Physiotherapy. She participated in the course "Mobile applications and other technologies for people with autism spectrum disorder". Ella Deni is the coordinator of the IVASS physiotherapy team, leading the programs related to physical exercise and health.

8. Composition of the protocol

This protocol defines four related research studies focused on the field of Participatory Health Informatics. Each of the studies will be described in detail below.

9. Study I: Identification of physical activity habits and use of technology among people with intellectual disabilities

9.1 Objective

This first study aims to define the specific context in which the MOVE-IT project will be carried out. We want to explore what are the current physical activity habits of people with mild or moderate intellectual disabilities in the Valencian Community and their daily relationship with technologies, both at a general level and regarding physical activity.

9.2 Methodology

9.2.1 Study design and techniques

This study has been designed following an exploratory approach that will enable a better understanding of the problem being addressed without providing definitive evidence. We will use a survey method implemented as an online digital questionnaire.

9.2.1.1 Questionnaire

The questionnaire for this study (Annex I) has been carefully designed by a group of experts to analyze the current physical activity habits and the use of technologies among people with mild or moderate intellectual disabilities. This questionnaire will be composed of four sections, that will collect data from different categories: socio-demographic and intellectual disability (section 1), available resources for the development of physical activity (section 2), physical activity habits (section 3) and its relationship with technology (section 4). The questionnaire is adapted to people with mild or moderate intellectual disabilities' abilities. Several types of questions are used (single choice or multiple choice with several answers).

The second section has been defined based on the questionnaire used by Howie et al. 2012[1]. The third section on physical activity habits is based on the adapted IPAQ standardized questionnaire, including images that make it easier for participants to understand the question without distracting them from the main task. The last section is based on the questionnaire used by Patrick et al. 2020[2].

9.2.2 Participants

This study focuses on mild to moderate intellectual disability, which is characterized by a set of practical difficulties in the area of learning that does not affect their ability to live autonomously with adequate support (Maulik et al. 2011). A non-probabilistic selection for convenience will be followed to create the sample of participants. People with mild or moderate intellectual disabilities who use IVASS services will be invited to participate. A participation of 40 people with intellectual disabilities from the Valencian Community is expected.

9.2.2.1 Selection criteria

The selection criteria to participate in this study are detailed below:

Inclusion criteria

- People with mild or moderate disabilities
- Adults (age greater than or equal to 18 years)
- Belonging to the Valencian Community

[1]EK Howie, TL Barnes, S. McDermott, JR Mann, J. Clarkson, and RA Meriwether, "Availability of physical activity resources in the environment for adults with intellectual disabilities," Disabil. Health J., vol. 5, no. 1, p. 41–48, 2012.

[2]PA Patrick, I. Obermeyer, J. Xenakis, D. Crocitto, and DM O'Hara, "Technology and social media use by adult patients with intellectual and/or developmental disabilities," Disabil. Health J., vol. 13, no. 1 p. 100840, 2020.

Exclusion criteria

- Not giving consent to participate in the study

9.2.2.2 Recruitment

Participant recruitment will be carried out with the active participation of IVASS. Users of the Institute's services will be invited to participate through direct contact during their visits to the center or by means of an e-mail message containing an adapted message and the link to access the survey. The survey will remain open for a month but a early close could happen if a sufficient number of valid responses is reached (greater than the expected sample size). A reminder about participation will be sent two weeks after the first invitation.

9.2.3 Ethical aspects

9.2.3.1 Participant information sheet

An information sheet for the participant (Annex II) will be available through a link included on the initial page of the online questionnaire. This sheet will include all the relevant information on the project as well as the procedures for contacting the research team for any question related to the study (resolution of doubts, consent withdrwal, etc.).

9.2.3.2 Informed consent

The first page of the questionnaire will offer the potential participant information on the most relevant aspects of the study. On this initial page, the participant will not be asked for the input of any personal data, just they will be asked to give their consent to participate in the study. To give the consent, participants must select the appropriate option available in the digital form (Annex III). Once the participant gives his/her consent, he/she will be able to continue advancing in the questionnaire by accessing the study data collection form. The questionnaire will be filled out anonymously and voluntarily by the participants, so there will be no identification of the participant as study data. In order to proceed properly in relation to the participant's right to opt out, once the person agrees to participate in the study, a participation code is generated that will be informed on the last screen after sending their responses. In this case, the participant will be informed both in the online questionnaire itself and in the information sheet of the importance of saving said code in order to be able to exercise the rights of withdrawal of consent in the future.

9.2.3.3 Withdrawal of participant's consent

At any time, the participant may withdraw their consent to participate. The participant must contact the main researcher and explicitly declare their wish to withdraw consent. It is mandatory for the participant to provide their participant code to be able to identify his/her answers since the questionnaire was answered anonymously.

9.2.4 Procedure for completing the questionnaire

The questionnaire may be filled out autonomously or with the help of a support person if the participant so requires. In any case, participation will be voluntary. The support people will receive an explanatory document that will include the instructions to follow and indications about their role in the process. They will be asked to maintain a neutral position at all times that does not affect the participant's response. Those concepts that may cause different interpretations by the participants or support people will be clearly defined using appropriate language.

9.2.5 Data collection

The primary data for this study will be collected using the aforementioned online survey detailed in Annex I. This survey will be completed anonymously and voluntarily. The survey will remain active for one month, but it may end earlier if the expected number of valid responses is reached.

9.2.6 Data protection

The data collected will be anonymous. The information collected will be stored in the infrastructures of the Universitat Politècnica de València. No information regarding the identification of the participants will be stored. Only members of the research team and project collaborators will have access to the information collected for analysis. All information related to the collection, storage, treatment, access and sharing of data will be informed to the participant (Annex XI) and these procedures will be carried out in compliance with current data protection regulations, the Organic Law on Data Protection and Guarantee of Rights (LOPDGDD) and the General Data Protection Regulation (RGPD).

9.2.7 Data analysis

After completing the data collection, an inspection of the data will be carried out to verify its validity. Those participants who have not completely filled in the data on physical activity habits or those related to the use of technologies will be discarded. Whenever the sample size allows it, the data collected will be analyzed using statistical methods. First, descriptive statistical variables such as the mean or median will be calculated to analyze the composition of the sample. On the other hand, correlation analysis between variables will be carried out, including multivariate analysis, to determine the degree of correlation and its statistical significance between them. The possible relationship between variables age, gender and severity of disability with the level of physical activity and the use of technology will be analyzed. The correlation analysis techniques used will be appropriate for the type of data. That is, the Pearson correlation coefficient will be used in the analysis between continuous variables, the Student's t approximation in biserial-point analysis and the chi-square in the analysis of dichotomous variables.

10. Study II: Analysis of digital skills and the use of technologies focused on physical activity among people who support/care for people with intellectual disabilities

10.1 Objective

This study seeks to understand the level of digital skills as well as the use of technologies, especially in relation to the promotion of physical activity, of people in charge of caring for people with intellectual disabilities in the Valencian Community. This study will allow us to understand the context in which the promotion of physical activity takes place.

10.2 Methodology

10.2.1 Study design and techniques

This study has been designed following an exploratory approach that will enable a better understanding of the problem being addressed without providing definitive evidence. We will use a survey method implemented as an online digital questionnaire.

10.2.1.1 Questionnaire

The questionnaire for this study (Annex IV) has been carefully designed by a group of experts to analyze the digital skills and resources commonly used by professionals and caregivers of people with intellectual disabilities. This questionnaire will be composed of three sections: socio-demographic (section 1), digital skills (section 2) and their use of technology and available resources (section 3). Various types of questions are used (multiple choice with one or several answers, free text or assessment scales).

The digital competence section is based on the eHEALS questionnaire adapted to Spanish. The eHEALS scale is one of the most widely used scales to quickly and easily measure competence in eHealth.

10.2.2 Participants

This study focuses on professionals and caregivers/relatives of people with moderate or mild intellectual disabilities. A non-probabilistic intentional selection will be followed to create the sample of participants. In this sense, professionals and caregivers of people with mild or moderate intellectual disabilities who use IVASS services will be invited to participate.

10.2.2.1 Selection criteria

The selection criteria to participate in this study are detailed below:

Inclusion criteria

- Professionals or family members who care for people with mild or moderate disabilities
- Adults (age greater than or equal to 18 years)
- Belonging to the Valencian Community

Exclusion criteria

- Not having sufficient reading comprehension in Spanish to understand the study and its questions
- Not having sufficient reading and writing capacity to give his/her consent
- Not giving consent to participate in the study

10.2.2.2 Recruitment

The recruitment of participants will be carried out with the active participation of IVASS. Professionals from the centers and relatives of users of the Institute's services will be invited to participate through an email message that will contain an invitation message and the link to access the survey. The survey will remain open for one month. A reminder about participation will be sent two weeks after the first invitation.

10.2.3 Ethical aspects

10.2.3.1 Information sheet for the participant

An information sheet for the participant (Annex V) will be available through a link included on the initial page of the online questionnaire. This sheet will include all the relevant information on the project as well as the procedures for contacting the research team for any question related to the study (resolution of doubts, consent withdrawal, etc.).

10.2.3.2 Informed consent

The first page of the questionnaire will offer the potential participant information on the most relevant aspects of the study. On this initial page, the participant will not be asked for input any personal data, just will be asked to give their consent to participate in the study. They must select an appropriate option (Annex VI). Once the participant gives his/her consent, the participant will be able to continue advancing in the questionnaire by accessing the study data collection form. The questionnaire will be filled out anonymously and voluntarily by the participants, so there will be no identification of the participant as study data. In order to proceed properly in relation to the participant's right to opt out, once the person agrees to participate in the study, a participation code is generated that will be informed on the last screen after sending their responses. In this case, the participant will be informed both in the online questionnaire itself and in the information sheet of the importance of saving said code in order to be able to exercise the rights of withdrawal of consent in the future.

10.2.3.3 Withdrawal of participant's consent

At any time, the participant may withdraw their consent to participate. To exercise this right, the participant must contact the main researcher and expressly declare their wish to withdraw consent. It is mandatory for the participant to provide their participant code to be able to identify her answers since the questionnaire was answered anonymously.

10.2.4 Data collection

The primary data for this study will be collected using the aforementioned online survey detailed in Annex IV. This survey will be completed anonymously and voluntarily. The survey will remain active for one month but it may end earlier if the expected number of valid responses is reached.

19.2.5 Data protection

The data collected in all the studies proposed will be anonymous. The information collected will be stored in the infrastructures of the Universitat Politècnica de València. No information regarding the identification of the participants will be stored. Only members of the research team and project collaborators will have access to the information collected for analysis. All information related to the collection, storage, treatment, access and sharing of data will be informed to the participant (Annex XI) and these procedures will be carried out in compliance with current data protection regulations, the Organic Law on Data Protection and Guarantee of Rights (LOPDGDD) and the General Data Protection Regulation (RGPD).

10.2.6 Data analysis

After completing the data collection, an inspection of the data will be carried out to verify its validity. Unanswered questions will not be considered in the data analysis. If the sample size allows it, the data collected will be analyzed using statistical methods. Firstly, descriptive statistical variables such as the mean will be calculated to analyze the composition of the sample. On the other hand, correlation analysis between variables will be carried out, including multivariate analysis, to determine the degree of correlation and its statistical significance between them. The possible relationship between variables such as age, gender, level of study with the level of digital skills and the use of technologies will be analyzed. The correlation analysis techniques used will be appropriate for the type of data compared. That is, the Pearson correlation coefficient will be used in the analysis between continuous variables, the Student's t approximation in biserial-point analysis and the chi-square in the analysis of dichotomous variables.

11. Study III: Co-design of personalization of exergames for the promotion of physical activity of people with intellectual disabilities

11.1 Objective

Based on a series of previously designed prototypes, this study aims to explore people with mild or moderate intellectual disabilities' preferences and perceived relevance of personalization techniques in the Valencian Community.

11.2 Methodology

To achieve the proposed objectives, a participatory workshop will be held. It is proposed to carry out at least 3 sessions of an approximate duration between 2 and 3 hours. Sessions will be held in person if possible. Remote sessions will be conducted using the technical means available at UPV and IVASS if in-person meetings are not possible.

11.2.1 Participants

Between 1 and 3 teams will participate in each session of the participatory workshop. Each team will consist of, at least, two people with mild or moderate intellectual disabilities, a professional and two family members/caregivers will participate. In addition to these participants, at least, a moderator (member of the research team) will participate in each session. The moderator will present the tasks to be carried out, explain the dynamics, monitor activity times, make notes and solve any doubts. It is planned to hold at least 3 face-to-face sessions in various centers of IVASS.

11.2.1.1 Selection criteria

The selection criteria to participate in this study are detailed below:

Inclusion criteria

- Participants must belong to one of the following categories:
    - Professionals who care for people with mild or moderate disabilities
    - Family members of people with mild or moderate disabilities
    - People with mild or moderate disabilities
- Adults (age greater than or equal to 18 years)
- Belonging to the Valencian Community

Exclusion criteria

- Not giving consent to participate in the study

11.2.2 Workshop structure

The digital solutions (exergames) designed by the Norwegian research team will be used as case studies. Each workshop session will consist of 4 phases, as shown in Figure 2:

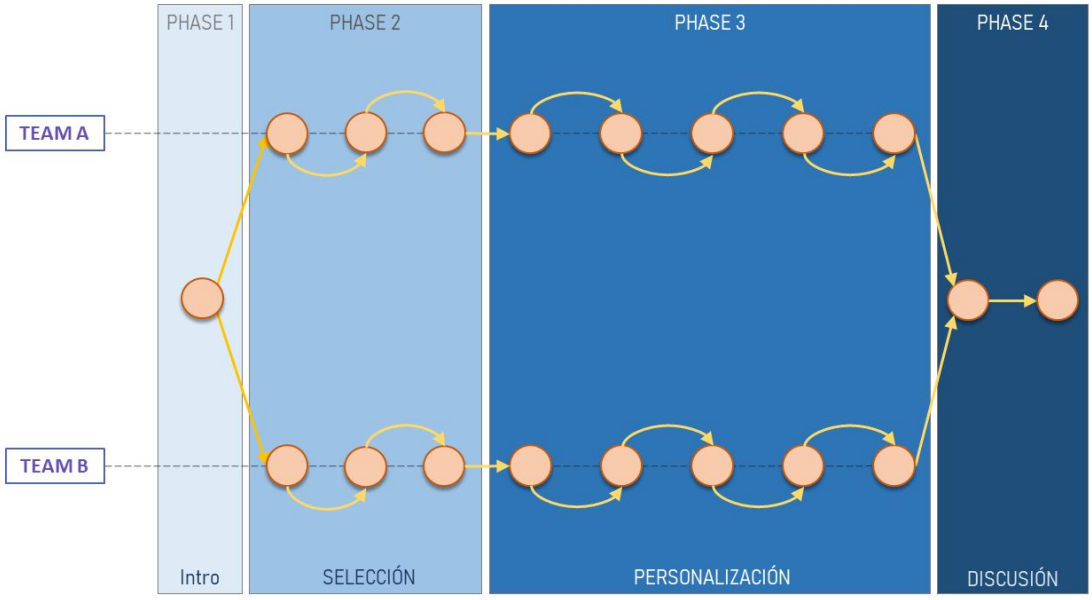

Figure 2: Phases of the workshop

The first phase aims to briefly introduce the project, its objectives, the moderator, and the various phases and activities of the workshop. In addition, the possibility of carrying out various preparatory activities for the development of creative activities. During this phase, the participants will be grouped into predefined work teams.

In the beginning of the second phase, the moderator will briefly present the digital solutions developed by the Norwegian research team. The moderator will encourage a debate among the participants with the aim of identifying potential barriers and preferences in the use of each of them. Finally, one of the solutions to be worked on in the next phase will be selected. The moderator will encourage the participants to formulate any ideas they find interesting while maintaining an "open-minded" approach. The person who moderates will not influence any of the participants with their personal opinions or appreciations.

Once one of the solutions has been selected, the activities proposed in the next phase will be carried out. The first activity aims to identify training needs to be able to use the technological solution as autonomously as possible. A set of aspects have been previously defined to be used as guides during the discussion. These aspects address technical, motivational, accessibility and physical activity issues. The identified training needs will be noted on a template prepared for this task. Other relevant aspects such as the type of format preferred for training, container of information (included in the technological solution itself or in an independent tutorial), etc. will

be discussed for each need. Participants will discuss the potential benefits and drawbacks of including some of these customization techniques in the selected solution[3]. Discussion will be encouraged about its inclusion, to which extend, in what format, and whether it will be integrated into the solution or as part of the supporting material. The third activity will have a mechanism similar to that proposed in the second but will focus on gamification aspects[4]. The following activity will use the same mechanism again but focused on motivational aspects following the CALO-RE taxonomy proposed by Michie et al.[5]. The last activity proposes the re-design of some screens of the solution to integrate the decisions made regarding personalization, gamification and motivational elements.

In the last phase each team will explain the most relevant decisions made in the previous phase as well as their re-design proposal. The person who moderates the workshop will promote debate among the participants on the issues that have been worked on and the re-designs presented. This sharing and debate will be audio recorded for later analysis. The recordings will be transcribed, anonymized and coded following a methodology similar to that used in a thematic analysis. The recordings will be stored on a password-protected computer to which only members of the research team have access. Once the project is finished after the time established in the call, these recordings and the transcripts will be destroyed.

11.3 Case Studies: Prototypes

Three case studies have been defined:

11.3.1 Case study 1: Technological solution 1

The first solution consists of a sensor device that is attached to a stationary bike to measure various parameters of physical activity. The system is complemented with an app that can be installed on a mobile or tablet. This app provides a realistic environment to user and offers certain information regarding the activity.

[3]H. op den Akker, VM Jones, and HJ Hermens, "Tailoring real-time physical activity coaching systems: a literature survey and model," User Model. User-adapt. Interact., vol. 24, no. 5, p. 351–392, 2014.

[4]Hamari, J., Koivisto, J., Pakkanen, T., 2014a. Do persuasive technologies persuade? — a review of empirical studies. In: Spagnolli, A., Chittaro, L., Gamberini, L. (Eds.), Persuasive Technology. Springer International Publishing:pp. 118–136 http://dx.doi. org/10.1007/978-3-319-07127-5_11

[5]S. Michie, S. Ashford, FF Sniehotta, SU Dombrowski, A. Bishop, and DP French, "A refined taxonomy of behavior change techniques to help people change their physical activity and healthy eating behaviors: the CALO-RE taxonomy," Psychol Heal., vol. 26, no. 11, p. 1479–1498, 2011.

11.3.2 Case study 2: Technological solution 2

It is an app that implements an adapted physical activity coaching system using a virtual trainer (an avatar). The user will receive messages and recommendations on physical activity through this virtual trainer.

11.3.3 Case study 3: Technological solution 3

The last case represents an augmented reality app aimed to increase the level of physical activity of people with intellectual disabilities, in particular the daily time spent walking. This app offers a set of challenges and rewards to users. As users reach their goals or meet challenges, certain rewards are offered using augmented reality techniques. Users will be able to obtain these virtual rewards using their mobile phones. This app is designed to generate an improved experience with physical activity.

11.4 Informed consent

Before beginning the study, potential participants will be informed by the responsible researcher about the project and its objectives in general, as well as about the corresponding study, its objectives, the reasons why they have been selected to participate, the activities to be perform, its risks and benefits, the duration of the study, and all aspects related to the data collected, including the type, reason, anonymization, storage and treatment of the same, access and sharing, etc. All this information will be contained in the participant information sheet that will be provided to the participant (Annex VII). During this informative session all the doubts to the potential participants will be solved. Besides, the procedure for contacting the research team during the study or in the future will be informed. Potential participants will also be informed of their rights as research subjects, including the procedures for withdrawing their consent. Each participant must provide their consent in writing using the informed consent document defined in the project (Annex VIII).

11.5 Data collection

Each participant will be asked for basic demographic data (age range, years of experience, professional profile, gender, institution, contact email) and opinions based on their experience.

11.5.1 Data protection

The data will be anonymously collected. The information collected will be stored in the infrastructures of the Universitat Politècnica de València. No information regarding the identification of the participants will be stored. Only members of the research team and project collaborators will have access to the information collected for analysis. All information related to the collection, storage, treatment, access and sharing of data will be informed to the participant (Annex XI) and these procedures will be carried out in compliance with current data protection

regulations, the Organic Law on Data Protection and Guarantee of Rights (LOPDGDD) and the General Data Protection Regulation (RGPD).

11.6 Analysis of collected data

After accepting participation and signing the informed consent, the participant will be asked to anonymously fill out a questionnaire with demographic questions (age range, gender, institution where they work, specialty, years of experience in the specialty (range). Each participant will be assigned a code, previously generated by the research team, which will be known only by the members of this team. This code will be inserted in each questionnaire to indirectly identify the participant in order to be able to delete the data in case to withdraw the consent.

The debate held in the workshop sessions will be audio recorded for later analysis. The recordings will be literally transcribed and anonymized (all references to people will be removed). The data collected in this activity will be opinions agreed by each team. An open debate will be promoted without the need to identify the participant before making their intervention in the discussion to favor the discussion flow. The transcripts will be coded following a methodology similar to thematic analysis. In this sense, the analysis process will be iterative and at least two researchers will participate. After several readings of the transcripts to become aware of the contents addressed, At least two researchers will independently carry out a first coding of the complete content or part of it. After this first coding, a coordination meeting will be held to establish a consensus on the coding scheme to be used. Then, various iterations will be repeated until consensus is reached and the definitive coding scheme is established. Once such a scheme is established, a researcher will perform a new iteration encoding the full content of the transcripts. After this, several researchers will agree on a first proposal of topics based on the codified content. The identified themes will be grouped by consensus into higher-level thematic units. This process will be repeated until a thematic organization is obtained that represents the content of the transcripts and allows for an interpretation and explanation of it following the inductive procedure. The recordings will be stored on a password-protected computer to which only members of the research team have access. Once the project is finished, within the period of time established in the call, these recordings and the transcripts will be destroyed.

12. Study III: Analysis of barriers and facilitators in supporting the use of technologies to promote physical activity among people with intellectual disabilities and co-design of educational resources

12.1 Objective

The objective of the study is to identify the barriers and facilitators in supporting the use of technological solutions for physical activity by professionals and families of people with intellectual disabilities in the Valencian Community. Our hypothesis is that some of these barriers and facilitators are related to the digital capacities of these professionals/caregivers, as reported in the literature. Based on this hypothesis, as part of the study, preferences regarding various aspects related to training for the development of these capacities will be explored. Aspects related to content, format (especially digital), duration, etc. of possible educational resources will be discussed.

12.2 Methodology

To achieve the proposed objectives, a participatory workshop will be conducted. It is proposed to carry out several sessions of an approximate duration between 2 and 3 hours. Professionals and relatives/caregivers of people with mild or moderate intellectual disabilities will participate in it. Sessions will be conducted in person whenever possible. The sessions will be performed remotely using the technical means available at UPV and IVASS if in-person meetings are not possible.

12.2.1 Participants

Between 5 and 15 professionals and relatives/caregivers of people with mild or moderate intellectual disabilities will participate in each session. If the number of participants is greater than 8, they will be grouped into work teams considering aspects such as gender, the type of relationship with the person with intellectual disability (professional or family) and the level of experience in the field of study. In addition to these professionals/caregivers, at least one person will participate in each session to moderate the session (member of the research team). The moderator will present the tasks to be carried out, explain the dynamics, monitor activity times, make notes, and solve any doubts. At least 3 sessions are expected to be conducted in various centers of IVASS.

12.2.1.1 Selection criteria

The selection criteria to participate in this study are detailed below:

Inclusion criteria

- Professionals or family members who care for people with mild or moderate disabilities
- Adults (age greater than or equal to 18 years)
- Belonging to the Valencian Community

Exclusion criteria

- Not giving consent to participate in the study

12.2.2 Workshop structure

The participatory workshop will be divided into several sessions. To facilitate its development, several case studies have been defined. These case studies will present specific situations regarding the factors that influence the use of technologies to promote physical activity among people with intellectual disabilities. They have been defined with the collaboration of experts in the field and based on the usual situations experienced by people with intellectual disabilities. Furthermore, as a result of a quick literature review, a list of potential barriers and facilitators has been obtained that can be explored during the workshop sessions.

Each workshop session will consist of 5 phases, as shown in Figure 1:

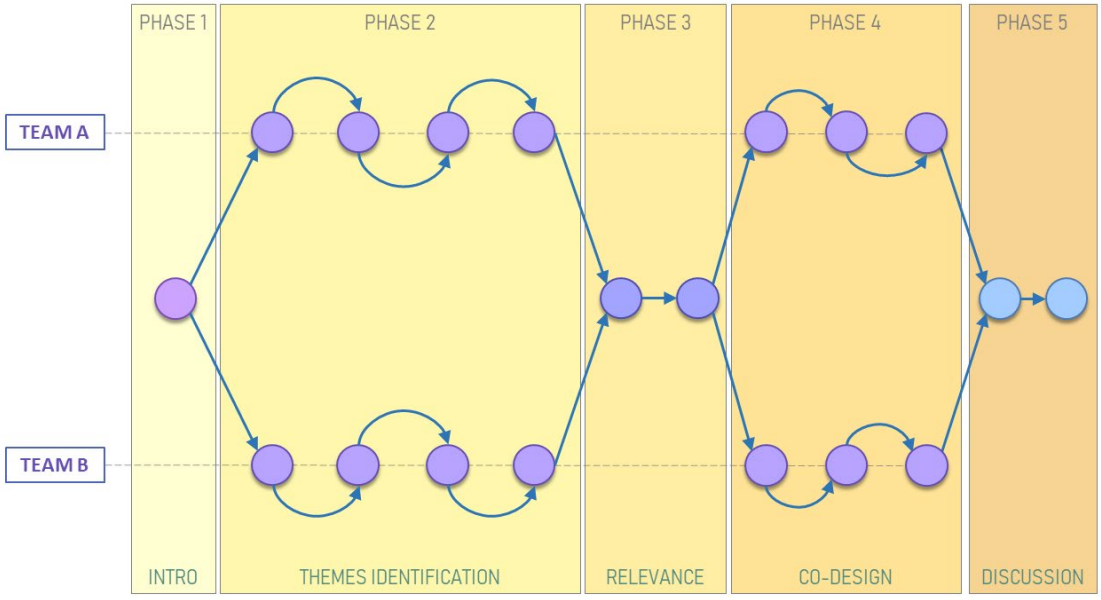

Figure 1: Workshop phases

The first phase aims to briefly introduce the project, its objectives, the person who moderates it, and the various phases and activities of the workshop. In addition, the possibility of carrying out various preparatory activities for the development of creative activities. During this phase, if the number of participants in the session is large enough, participants will be grouped into several work teams.

In the beginning of the second phase, the moderator will present a general situation to the participants. The teams will be asked to identify, by discussing among the members of the same team, the potential issues, barriers and needs that could affect the support in the promotion of physical activity using technological solutions. After this general situation, a new scenario will be proposed to the participants, corresponding to the first case study. Thus, the activity will be repeated until the three predefined cases are analyzed. The moderator will ask the participants to focus specifically on the situations raised in each case. In addition, it will motivate the participants to formulate any ideas that they consider interesting while maintaining an "open-minded" approach.

Once the needs and themes have been defined, the teams will group each theme identified into more general themes. Also, they will classify themes into three categories based on the perceived level of relevance in terms of support for the promotion of physical activity using technologies (high, medium or low). Once all the topics are classified, each team will explain the topics identified as well as the relevance assigned to the components of the other team and a time for debate will open. Both activities will be audio recorded for later analysis. The recordings will be transcribed, anonymized and coded following a methodology similar to thematic analysis. The recordings will be stored on a password-protected computer to which only members of the research team have access. Once the project is finished, after the period established in the call, these recordings and transcripts will be destroyed.

The fourth phase aims to co-design digital materials for the development of skills required for the promotion of physical activity using technologies. Possible differences between the defined case studies will be analyzed. First, the moderator will present a supposed ideal technological solution that will be used as a basis for discussion. This phase is composed of three activities. In the first of them, the participants will be asked to identify the relevant information they need to know to recommend the ideal solution. Also, they will be asked, using previously prepared templates and resources, to design an understandable material for recommendation of a digital physical activity solution. The second activity aims to create a table of contents for educational materials on the use of this ideal solution. The first step will be to identify the themes based on the factors identified in the previous phase and a set of predefined themes. The last activity will consist of the design of one of the educational materials of the proposed topics. To this end, discussion will be encouraged on relevant aspects such as the type of resource (video, image, text, etc.), its duration, the language used, additional content (progress bars, avatars, etc.), elements of self-assessment, summary and reminder elements, etc. The first step will be to identify the themes based on the factors identified in the previous phase and a set of predefined themes.

Finally, all participants will discuss the decisions made in the previous phase.

Once all the workshop sessions end, the results and conclusions obtained from the analysis will be sent to the participants so that they can validate and add the comments they consider appropriate. To do this, the participant's email address will be kept for the time necessary to carry out said activity.

12.3 Case studies

Three case studies have been defined:

12.3.1 Case study 1: Person without physical activity habit and technology user

This case represents an adult with mild or moderate intellectual disability who is a user of technology but does not have a habit of physical activity. This person does not have great physical impediments to exercise, however, they do not have the motivation or knowledge to carry out this type of activity. This person often uses assistive devices to perform everyday tasks such as time management, planning tasks, or as a transportation assistant.

12.3.2 Case study 2: Person without physical activity habit and non-user of technology

An adult person with mild or moderate intellectual disability who has no physical limitations. This person does not show interest in the use of technologies mainly because barriers found in their use. He has not tried to use any type of technological solution in his day to day life. On the other hand, this person has no interest in physical activity. In his youth he had no encouragement to consider practicing any type of sports activity. He does not usually leave the house much and spends a lot of time with sedentary behavior watching television or drawing. Although he/she is concerned about his health, he does not know the benefits of regular physical activity.

12.3.3 Case study 3: Person with a habit of physical activity and with an interest in technology

In this case, the person with mild or moderate intellectual disability already has a habit of physical activity and uses technological solutions in their day-to-day life as support systems or to carry out some entertainment activity. Despite using technology in his daily life, he has not tried any technological solution on physical activity. He/she is very interested in trying some solutions that will allow his/her to be aware of his/her daily activity levels.

12.4 Informed consent

All potential participants before starting the study will be informed by the moderator about the project and its objectives in general, as well as about the corresponding study, its objectives, the reasons why they have been selected to participate, the activities that have been to perform, its risks and benefits, the duration of the study, and all aspects related to the data collected, including the type, reason, anonymization, storage and treatment of the same, access and sharing, etc. All

this information will be collected in the information sheet for the participant of this study (Annex IX). During this informative session all the doubts to the potential participants will be solved. Besides, the procedure for contacting the research team during the study or in the future will be informed. Potential participants will also be informed of their rights as research subjects, including the procedures for withdrawing their consent. The person will not be considered a participant or carry out any of the proposed activities until the signed informed consent has been delivered (Annex X).

12.5 Data collection

Each participant will be asked for basic demographic data (age range, years of experience, professional profile, gender, institution, contact email) and opinions based on their experience.

12.5.1 Data protection

Data will be anonymously collected. The information collected will be stored in the infrastructures of the Universitat Politècnica de València. No information regarding the identification of the participants will be stored. Only members of the research team and project collaborators will have access to the information collected for analysis. All information related to the collection, storage, treatment, access and sharing of data will be informed to the participant (Annex XI) and these procedures will be carried out in compliance with current data protection regulations, the Organic Law on Data Protection and Guarantee of Rights (LOPDGDD) and the General Data Protection Regulation (RGPD).

12.6 Analysis of collected data

After accepting participation and signing the informed consent, the participant will be asked to anonymously fill out a questionnaire with demographic questions (age range, gender, institution where they work, specialty, years of experience. Each participant will be assigned a code , previously generated by the research team, which will be known only by the members of this team. This code will be inserted in each questionnaire to indirectly identify the participant in order to be able to delete the data in case of withdrawing their consent.

The debate will be audio recorded for later analysis. The recordings will be literally transcribed and anonymized (all references to people will be removed). The data collected in this activity will be opinions agreed by each team. An open debate will be promoted without the need to identify the participant before making their intervention in the discussion to favor the discussion flow. The transcripts will be coded following a methodology similar to thematic analysis. In this sense, the analysis process will be iterative and at least two researchers will participate. After several readings of the transcripts to become aware of the contents addressed, At least two researchers will independently carry out a first coding of the entire content or part of it. After this first coding,

a coordination meeting will be held to establish a consensus on the coding system to be used. Then, various iterations will be repeated until consensus is reached and the final coding system is established. Once such a system is established, a researcher will perform a new iteration encoding the full content of the transcripts. After this, several researchers will agree on a first proposal of topics based on the codified content. The identified themes will be grouped by consensus into higher-level thematic units. This process will be repeated until a thematic organization is obtained that represents the content of the transcripts and allows for an interpretation and explanation of it following the inductive procedure. The recordings will be stored on a password-protected computer to which only members of the research team have access. Once the project is finished and the period established by the call has elapsed, these recordings and transcripts will be destroyed.

Annex I: Physical Activity Habits and Technology Use Questionnaire

1. Demographics

Age range

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

Gender

- Men
- Women
- Other

Height (in centimeters):

Weight (in kilograms):

Disability Severity Level:

- deep
- high
- moderate
- Mild
- I do not know

Housing situation

- I live with my family
- I live in supervised accommodation
- I live in a shared home (unsupervised)
- I live independently in my own home

Employment status

- In training
- Full-time worker
- Part-time worker

- unemployed

Life habits

- Smoker (indicate estimate of daily consumption)
- Alcohol consumption (indicate estimate of daily consumption)

2. Availability of resources for physical activity

Available equipment

1. Sports equipment (football, basketball, baseball, tennis, paddle tennis, golf, etc.)
2. treadmill for walking/running
3. Dumbbells or weight equipment
4. Sport mats, elastic bands, rubber bands, benches, etc.
5. Bicycle
6. Stationary bicycle
7. Skates, skates, etc.
8. Pet that needs walks

The environment

9. front or back yard
10. public parks
11. Walking/running trails or tracks
12. Bike paths/paths
13. Indoor recreation centers (gyms, fitness/yoga rooms, etc.)
14. Outdoor recreation centers (skate, skating, etc.)
15. Swimming pools
16. Indoor sports courts, fields or courts (soccer, basketball, handball, volleyball, etc.)
17. Tracks, fields or outdoor sports courts (soccer, basketball, tennis, etc.)

Other factors

18. Organized sports or physical activity events (soccer teams, basketball teams, fun runs, etc.)
19. Do your friends usually play sports or exercise?
20. Do your relatives usually practice sports or physical exercise?
21. Do you feel safe walking around your neighborhood during the day?
22. Do you feel safe walking around your neighborhood at night?

3. Physical activity habits

Think about all the INTENSE activities you did in the last 7 days. Vigorous physical activities refer to those that involve intense physical exertion and make you breathe much harder than normal. Think only of those physical activities that you did for at least 10 minutes at a time.

1. During the last 7 days, on how many days did you do vigorous physical activities such as lifting heavy weights, digging, aerobics, or fast bicycling? (Days per week; No intense physical activity)
2. How much total time did you usually spend in vigorous physical activity on one of those days? (example: if he practiced 20 minutes mark 0 h and 20 min) (Hours per day; Minutes per day; Don't know / Not sure)

Think about all the MODERATE activities you did in the last 7 days. Moderate activities are those that require moderate physical exertion that make you breathe somewhat more intensely than normal. Think only of those activities that you did for at least 10 minutes at a time.

3. During the last 7 days, on how many days did you do moderate physical activities such as carrying light weights, bicycling at regular speed, or playing doubles tennis? Do not include walking. (Days per week; No intense physical activity)
4. How much total time did you usually spend in moderate physical activity on one of those days? (example: if he practiced 20 minutes mark 0 h and 20 min) (Hours per day; Minutes per day; Don't know / Not sure)

Think about the time you spent walking in the last 7 days. This includes walking at work or home, to get from one place to another, or any other walking that you might do solely for recreation, sport, exercise, or leisure.

5. During the last 7 days, on how many days did you walk for at least 10 minutes at a time? (Days per week; No intense physical activity)
6. How much total time did you usually spend walking on one of those days? (Hours per day; Minutes per day; Don't know/Not sure)

The next question is about the time you spent SITTING during the weekdays of the last 7 days. This includes time spent at work, at home, in a class, and during leisure time. It can include time spent sitting at a desk, reading, riding the bus, or sitting or lying down watching TV.

7. How much time did you usually spend sitting during a business day? (Hours per day; Minutes per day; Don't know/Not sure)

4. Use of technologies

device usage

1. Have you ever used an activity bracelet (step counter, calories, etc.)?
    a. How often did you use the activity bracelet?
        - Once a week
        - 2-3 times a week
        - More than 4 times a week
        - I do not remember
    b. Do you still use it?
    c. Was the use of the activity bracelet comfortable for you?
        - Yes
        - Do not
        - I do not know
2. What other devices do you usually use?
        - Smartphone (phone on which you can install apps)
        - Smartwatch (digital watch that offers functionalities shared with the phone)
        - tablets
        - Desktop computer
        - Laptop
        - Internet through TV
        - Virtual assistants (Alexa, OK Google, etc.)
        - None
        - Others
3. Is the use of technology comfortable for you?
        - Yes
        - Do not
        - I do not know
4. What barriers do you find in the use of technologies?
        - Limited time for professionals/caregivers to help me
        - I was unsuccessful in the use previously / hesitant to try again
        - I would need training/support
        - I am not interested in technologies
        - The cost of the device
        - None/No barriers
        - Type of disability/Severity

Use of fitness apps

1. Have you used any application on physical activity on any device (smartphone, tablet, computer, etc.)? (Yes, No, I don't know)
    a. How often do you use it?
        - Once a week
        - 2-3 times a week
        - 4 or more times a week
        - I do not know
    b. Was the use of this application comfortable for you?
        - Yes
        - Do not
        - I do not know
2. What barriers do you find in the use of physical activity applications?
        - Limited time for professionals/caregivers to help me
        - I was unsuccessful in the use previously / hesitant to try again
        - I would need training/support
        - I am not interested in these applications
        - None/No barriers
        - Type of disability/Severity

Social media

1. Do you use social networks? (Yes, No, I don't know)
2. What kind of social networks do you use?
        - Facebook
        - Twitter
        - Instagram
        - tik tok
3. How often do you use social networks?
        - Once a week
        - 2-3 times a week
        - 4 or more times a week
        - I do not know
4. Have you ever used social networks for issues related to your physical activity? (Yes, No, I don't know)
3. What barriers do you find in the use of social networks?
        - Limited time for professionals/caregivers to help me

- I was unsuccessful in the use previously / hesitant to try again
- I would need training/support
- I am not interested in social media
- None/No barriers
- Type of disability/Severity

information search

1. Do you use the Internet/social networks/applications to search for information on physical activity? (Yes, No, I don't know)
2. Do you often look for information on YouTube about physical activity? (Yes, No, I don't know)

Annex II: Information sheet for the participant (Physical activity habits and use of technologies)

Protocol Title: Identification of physical activity habits and use of technology among people with intellectual disabilities (MOVE-IT) (STUDY I)

This Informative Document is addressed to people with mild or moderate intellectual disabilities and their caregivers, inviting them to participate in the research proposed in this project.

Principal investigator: Dr. Vicente Traver (Polytechnic University of Valencia)

Information about the project

My name is Vicente Traver Salcedo, University Professor at the Polytechnic University of Valencia, director of the SABIEN research group of the ITACA research institute, and head of the project. We are researching physical activity habits and technology use among people with intellectual disabilities. With this document I give you information and invite you to participate in this study. Before deciding on your participation, read this document carefully and request any additional information you deem appropriate, it is important that you know and understand all aspects of the project. You can talk to someone you feel comfortable with about the research

Before giving your consent, it is important that you know and understand the aspects of the project, for which you should read the following information slowly. Once you have understood the project and if you wish to participate, then you will be asked to complete the online questionnaire, understanding your submission as consent to participate in this study.

You can withdraw your consent at any time. To do this, you must write down the code that will be generated once you complete the form and send your answers.

Tell us if you have questions or need more information. Feel free to ask about any aspect that helps you clarify your doubts about it.

PROJECT OBJECTIVES

People with intellectual disabilities tend to have lower levels of physical activity compared to the general adult population and have a higher incidence of obesity. Some estimates establish that 50% of people with intellectual disabilities follow a sedentary lifestyle, presenting a low level of physical activity in 40% of cases. Sedentary lifestyle and these low levels of physical activity lead to problems that affect Their independence.

The objective of the MOVE-IT project is to analyze the habits of physical activity and use of technology among people with intellectual disabilities.

SELECTION OF PARTICIPANTS

We are inviting people with intellectual disabilities who are related to IVASS.

VOLUNTARY PARTICIPATION

Your participation in this research is completely voluntary. You can decide to participate or not.

WHAT ACTIVITIES WILL BE CARRIED OUT - INVESTIGATION PROCEDURES

We request your participation in an online study consisting of a questionnaire on physical activity habits and the use of technologies.

BENEFIT

The results of this study will serve to expand knowledge about physical activity habits and the use of technology among people with intellectual disabilities.

If you participate in this research, your participation will likely help us identify key issues from your experience.

COSTS AND FINANCING

The development of the activities proposed in this protocol will not imply an economic cost to the participants. All costs will be covered by the MOVE-IT research project, funded by the European Commission through the competitive call for ERASMUS + projects.

RISKS ASSOCIATED WITH THE RESEARCH

There are no physical or psychological risks involved in participating in this research.

CONFIDENTIALITY

The information collected in this study is done anonymously, not including information on the identification of the participants. All information collected by this research project will be kept confidential and will only be accessed by members of the project's research team. The identity of the participants in this research will never be shared. All information collected will be kept confidential. The collection, storage, treatment and access to data will be carried out in compliance with current data protection regulations, the Organic Law on Data Protection and Guarantee of Digital Rights (LOPDGDD) and the General Data Protection Regulations (RGPD).

INFORMATION ON DATA PROTECTION

Responsible for the treatment: The entity Universitat Politècnica de València (hereinafter UPV) with address at Camino de Vera s/n, 46022 Valencia and/or email address dpd@upv.es is responsible for processing the data of the Interested person contained in this authorization document and those derived from their voluntary participation in the study, tests and trials in which said Interested Person appears developed by the UPV.

Treatment purposes: Participation in the study, tests and trials in which the Interested person appears, manage and develop their participation, result of the study, tests and trials within the framework of the project.

Legal basis of the treatment: The legal basis for data processing is this agreement, the unequivocal consent of the Interested Person, expressed by reading and signing this document, as well as compliance with legal obligations, such as, for example, in the event that must prove the representation of third parties or proceed to the conservation of their data during the limitation period of the actions. Your data may be processed and stored based on the legitimate interest of serving the legitimate purposes of the UPV.

Recipients of the data: Recipient categories can be third entities related to the UPV and always within the scientific field. They may be other entities required by law, if applicable. It can be the beneficiary entity of the study.

International data transfers: The data of the interested person will not be subject to international transfer.

Data retention period: The personal data of the interested person, obtained during the study, will be kept during its development and, once finished, the data will be kept during the legal periods for the fulfillment of legal obligations and the attention of possible responsibilities.

Once the legal retention period has elapsed, your data will be kept indefinitely based on the legitimate interest of the UPV.

Rights: The interested person can exercise their rights of access, rectification, cancellation or deletion and opposition, limitation of treatment, right not to be the subject of a decision based solely on automated treatment, including profiling and portability of personal data, as well as the right to withdraw consent at any time, without affecting the legality of the treatment based on the consent prior to its withdrawal, by sending a written request to the following postal address: Data Protection Delegate, General Secretary, Camino de Vera s/n, Universidad Politécnica de Valencia, 46022 Valencia and/or electronically dpd@upv.es , providing a copy of your DNI/NIF or valid legal document to prove your identity.

AEPD contact information: In any case, the interested party is informed of the right to file a claim with a Control Authority (in Spain, the Spanish Agency for Data Protection or AEPD), in particular, when they consider that they have not obtained satisfaction in the exercise of their rights. To do this, you can contact the AEPD through www.agpd.es or at the following address C/ Jorge Juan, 6. 28001 – Madrid, and/or contact telephone number 912 663 517.

Prior to submitting said claim to the Spanish Data Protection Agency and on a completely voluntary basis, the interested party may contact the UPV Data Protection Officer at the following email address dpd@upv.es .

SHARING THE RESULTS

The knowledge generated in this research will be shared with you. In order for the results of this study to be accepted and integrated into the body of knowledge of the scientific community, they will be published in high-impact scientific journals and international conferences in the area of medical informatics, such as the Journal of Medical Internet Research (JMIR), International Journal of Medical Informatics (IJMI), Medical Informatics Europe (MIE2021), or congresses in the field of MS such as ECTRIMS.

RIGHT TO REFUSE OR WITHDRAW

You do not have to participate in this research.

WHO TO CONTACT

If you have any questions you can ask them by contacting:

Dr. Vicente Traver Salcedo

Direction
Phone:
E-mail:

Signed: Dr. Vicente Traver

This proposal has been reviewed and approved by the Ethics Committee of the Universitat Politècnica de València.

Annex III: Informed consent study I

Welcome to the MOVE-IT project questionnaire access page.

The MOVE-IT project, in which the UPV and IVASS collaborate, aims to "design and develop a combined education and intervention program to promote physical activity in people with intellectual disabilities at home, institutions or the community through the use of technological exergames".

Within the MOVE-IT project, this study, specifically, has the objective of "determining the current panorama of the Valencian Community on the use of technologies and physical activity habits among people with intellectual disabilities".

To achieve this goal, we ask you to participate by responding to a survey about your physical activity habits and use of technology. You can find detailed information about the project and study through the following link ("a link to the participant information sheet will appear here").

The survey will be completed voluntarily and anonymously.

Remember that by selecting the following option, you are giving your consent to participate in this study.

Annex IV: Questionnaire digital skills and use of technologies for the promotion of physical activity

1. Demographics

Age range

- 18-24
- 25-34
- 35-44
- 45-54
- 55-64
- 65+

Gender

- Men
- Women
- Other

Type of relationship with people with intellectual disabilities:

- Professional
- Familiar
- Other

Educational level

- Primary
- High school
- Bachelor/Higher Degree
- University Degree/Bachelor's Degree/Diploma
- Master
- Doctorate

employment status

- Full-time worker
- Part-time worker
- unemployed

2. Competence in eHealth (eHEALS SCALE)

one	I know what health resources are available on the Internet	1	2	3	4	5
two	I know where I can find useful health resources on the Internet	1	2	3	4	5
3	I know how I can find useful health resources on the Internet	1	2	3	4	5
4	I know how to use the Internet to find answers to my health questions	1	2	3	4	5
5	I know how to use health information I find on the Internet to help me	1	2	3	4	5
6	I have the necessary skills to evaluate the health resources I find on the Internet	1	2	3	4	5
7	I can distinguish high-quality health resources from low-quality health resources found on the Internet	1	2	3	4	5
8	I am confident in using information from the Internet to make health decisions	1	2	3	4	5

1: Totally disagree. 2: Disagree. 3: Neither agree nor disagree. 4: Agree. 5: Totally agree

3. Use of technologies

device usage

1. Have you ever used an activity bracelet (step counter, calories, etc.)? (Yes; No; I don't remember)
2. How often did you use the activity bracelet?
    - Once a week
    - 2-3 times a week
    - 4-5 times a week
    - More than 6 times a week
    - I do not remember
3. Do you see yourself qualified to help a person with an intellectual disability in the use of this type of device?
    1. Totally disagree
    2. Disagree
    3. Neither agree nor disagree
    4. Agree

5. Totally agree

4. What other devices do you usually use?
    - Smartphone (phone on which you can install apps)
    - Smartwatch (digital watch that offers functionalities shared with the phone)
    - tablets
    - Desktop computer
    - Laptop
    - Internet through TV
    - Virtual assistants (Alexa, OK Google, etc.)
    - None
    - Others
5. Do you see yourself qualified to help a person with an intellectual disability in the use of this type of device?
    - Totally disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Totally agree
6. What barriers do you find in the use of technologies?
    - Limited time
    - I was unsuccessful in the use previously / hesitant to try again
    - I would need training/support
    - I am not interested in technologies
    - The cost of the device
    - None/No barriers

Use of fitness apps

7. Have you used any application on physical activity on any device (smartphone, tablet, computer, etc.)? (Yes, No, I don't know)
8. How often do you use it?
    - Once a week
    - 2-3 times a week
    - 4-5 times a week
    - More than 6 times a week
    - I do not remember

9. Do you see yourself qualified to help a person with an intellectual disability in the use of this type of applications?
    - Totally disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Totally agree
10. Have you used any serious technological fitness games? (Yes, No, I don't know)
11. Do you see yourself qualified to help a person with an intellectual disability in the use of this type of serious games?
    - Totally disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Totally agree

Social media

6. Do you use social networks? (Yes, No, I don't know)
7. What kind of social networks do you use?
    - Facebook
    - Twitter
    - Instagram
    - tik tok
8. How often do you use social networks?
    - Totally disagree
    - Disagree
    - Neither agree nor disagree
    - Agree
    - Totally agree
9. Have you ever used social networks for issues related to physical activity? (Yes, No, I don't know)
10. Do you see yourself qualified to help a person with intellectual disability in the use of social networks?
    - Totally disagree
    - Disagree
    - Neither agree nor disagree

- Agree
- Totally agree

Annex V: Participant Information Sheet (Digital skills and physical activity)

Protocol Title: Identification of physical activity habits and use of technology among people with intellectual disabilities (MOVE-IT) (STUDY II)

This Informative Document is addressed to people with mild or moderate intellectual disabilities and their caregivers, inviting them to participate in the research proposed in this project.

Principal investigator: Dr. Vicente Traver (Polytechnic University of Valencia)

Information about the project

My name is Vicente Traver Salcedo, University Professor at the Polytechnic University of Valencia, director of the SABIEN research group of the ITACA research institute, and head of the project. We are investigating the level of digital skills as well as the use of technologies, especially in relation to the promotion of physical activity, that people in charge of caring for people with intellectual disabilities in the Valencian Community have. Before deciding on your participation, read this document carefully and request any additional information you deem appropriate, it is important that you know and understand all aspects of the project. You can talk to someone you feel comfortable with about the research

Before giving your consent, it is important that you know and understand the aspects of the project, for which you should read the following information slowly. Once you have understood the project and if you wish to participate, then you will be asked to complete the online questionnaire, understanding your submission as consent to participate in this study.

You can withdraw your consent at any time. To do this, you must write down the code that will be generated once you complete the form and send your answers.

Tell us if you have questions or need more information. Feel free to ask about any aspect that helps you clarify your doubts about it.

PROJECT OBJECTIVES

People with intellectual disabilities tend to have lower levels of physical activity compared to the general adult population and have a higher incidence of obesity. Some estimates establish that 50% of people with intellectual disabilities follow a sedentary lifestyle, presenting a low level of physical activity in 40% of cases. Sedentary lifestyle and these low levels of physical activity lead to problems that affect Their independence.

The objective of the MOVE-IT project is to understand the level of digital skills as well as the use of technologies, especially in relation to the promotion of physical activity, that people in charge of caring for people with intellectual disabilities in the Valencian Community have.

SELECTION OF PARTICIPANTS

We are inviting professionals/relatives of people with intellectual disabilities who are related to IVASS.

VOLUNTARY PARTICIPATION

Your participation in this research is completely voluntary. You can decide to participate or not.

WHAT ACTIVITIES WILL BE CARRIED OUT - INVESTIGATION PROCEDURES

We request your participation in an online study consisting of a questionnaire on digital skills and the use of technologies.

BENEFIT

The results of this study will serve to expand knowledge about digital skills and the use of technology among professionals/family members who care for people with intellectual disabilities.

If you participate in this research, your participation will likely help us identify key issues from your experience.

COSTS AND FINANCING

The development of the activities proposed in this protocol will not imply an economic cost to the participants. All costs will be covered by the MOVE-IT research project, funded by the European Commission through the competitive call for ERASMUS + projects.

RISKS ASSOCIATED WITH THE RESEARCH

There are no physical or psychological risks involved in participating in this research.

CONFIDENTIALITY

The information collected in this study is done anonymously, not including information on the identification of the participants. All information collected by this research project will be kept confidential and will only be accessed by members of the project's research team. The identity of the participants in this research will never be shared. All information collected will be kept confidential. The collection, storage, treatment and access to data will be carried out in compliance with current data protection regulations, the Organic Law on Data Protection and Guarantee of Digital Rights (LOPDGDD) and the General Data Protection Regulations (RGPD).

INFORMATION ON DATA PROTECTION

Responsible for the treatment: The entity Universitat Politècnica de València (hereinafter UPV) with address at Camino de Vera s/n, 46022 Valencia and/or email address dpd@upv.es is responsible for processing the data of the Interested person contained in this authorization document and those derived from their voluntary participation in the study, tests and trials in which said Interested Person appears developed by the UPV.

Treatment purposes: Participation in the study, tests and trials in which the Interested person appears, manage and develop their participation, result of the study, tests and trials within the framework of the project.

Legal basis of the treatment: The legal basis for data processing is this agreement, the unequivocal consent of the Interested Person, expressed by reading and signing this document, as well as compliance with legal obligations, such as, for example, in the event that must prove the representation of third parties or proceed to the conservation of their data during the limitation period of the actions. Your data may be processed and stored based on the legitimate interest of serving the legitimate purposes of the UPV.

Recipients of the data: Recipient categories can be third entities related to the UPV and always within the scientific field. They may be other entities required by law, if applicable. It can be the beneficiary entity of the study.

International data transfers: The data of the interested person will not be subject to international transfer.

Data retention period: The personal data of the interested person, obtained during the study, will be kept during its development and, once finished, the data will be kept during the legal periods for the fulfillment of legal obligations and the attention of possible responsibilities.

Once the legal retention period has elapsed, your data will be kept indefinitely based on the legitimate interest of the UPV.

Rights: The interested person can exercise their rights of access, rectification, cancellation or deletion and opposition, limitation of treatment, right not to be the subject of a decision based solely on automated treatment, including profiling and portability of personal data, as well as the right to withdraw consent at any time, without affecting the legality of the treatment based on the consent prior to its withdrawal, by sending a written request to the following postal address: Data Protection Delegate, General Secretary, Camino de Vera s/n, Universidad Politécnica de Valencia, 46022 Valencia and/or electronically dpd@upv.es , providing a copy of your DNI/NIF or valid legal document to prove your identity.

AEPD contact information: In any case, the interested party is informed of the right to file a claim with a Control Authority (in Spain, the Spanish Agency for Data Protection or AEPD), in particular, when they consider that they have not obtained satisfaction in the exercise of their rights. To do this, you can contact the AEPD through www.agpd.es or at the following address C/ Jorge Juan, 6. 28001 – Madrid, and/or contact telephone number 912 663 517.

Prior to submitting said claim to the Spanish Data Protection Agency and on a completely voluntary basis, the interested party may contact the UPV Data Protection Officer at the following email address dpd@upv.es .

SHARING THE RESULTS

The knowledge generated in this research will be shared with you. In order for the results of this study to be accepted and integrated into the body of knowledge of the scientific community, they will be published in high-impact scientific journals and international conferences in the area of medical informatics, such as the Journal of Medical Internet Research (JMIR), International Journal of Medical Informatics (IJMI), Medical Informatics Europe (MIE2021), or congresses in the field of MS such as ECTRIMS.

RIGHT TO REFUSE OR WITHDRAW

You do not have to participate in this research.

WHO TO CONTACT

If you have any questions you can ask them by contacting:

Dr. Vicente Traver Salcedo

Direction

Phone:

E-mail:

Signed: Dr. Vicente Traver

This proposal has been reviewed and approved by the Ethics Committee of the Universitat Politècnica de València.

Annex VI: Informed consent study II

Welcome to the MOVE-IT project questionnaire access page.

The MOVE-IT project, in which the UPV and IVASS collaborate, aims to "design and develop a combined education and intervention program to promote physical activity in people with intellectual disabilities at home, institutions or the community through the use of technological exergames".

Within the MOVE-IT project, this study, specifically, has the objective of "Understanding the current reality of people who support/care for people with intellectual disabilities in terms of their digital skills and the use of technologies in the Valencian Community" .

To achieve this objective, we ask you to participate by responding to a survey about your digital skills and your habit of using technology. You can find detailed information about the project and study through the following link ("a link to the participant information sheet will appear here").

The survey will be completed voluntarily and anonymously.

Remember that by selecting the following option, you are giving your consent to participate in this study.

Annex VII: Information sheet for the participant (Participatory workshop – Study III)

Protocol Title: Identification of physical activity habits and use of technology among people with intellectual disabilities (MOVE-IT) (STUDY III)

This Informative Document is addressed to people with intellectual disabilities or people who care for them and meet the inclusion criteria for this study, inviting them to participate in the research proposed in this project.

Principal investigator: Dr. Vicente Traver (Polytechnic University of Valencia)

Information about the project

My name is Vicente Traver Salcedo, University Professor at the Polytechnic University of Valencia, director of the SABIEN research group of the ITACA research institute, and head of the project. We are investigating relevant aspects in the design of technologies for the promotion of physical activity among people with intellectual disabilities in the Valencian Community. Before deciding on your participation, read this document carefully and request any additional information you deem appropriate, it is important that you know and understand all aspects of the project. You can talk to someone you feel comfortable with about the research

Before giving your consent, it is important that you know and understand the aspects of the project, for which you should read the following information slowly. Once you have understood the project and if you wish to participate, then you will be asked to participate in a participatory workshop session in which various team activities will be developed with the aim of establishing barriers, needs and preferences in terms of design aspects. technological solutions for the promotion of physical activity.

You can withdraw your consent at any time.

Tell us if you have questions or need more information. Feel free to ask about any aspect that helps you clarify your doubts about it.

PROJECT OBJECTIVES

People with intellectual disabilities tend to have lower levels of physical activity compared to the general adult population and have a higher incidence of obesity. Some estimates establish that 50% of people with intellectual disabilities follow a sedentary lifestyle, presenting a low level of physical activity in 40% of cases. Sedentary lifestyle and these low levels of physical activity lead to problems that affect Their independence.

The objective of study III of the MOVE-IT project is to know the attitudes and preferences of people with intellectual disabilities in the Valencian Community regarding the use of motivational and personalization aspects in digital tools for the promotion of physical activity.

SELECTION OF PARTICIPANTS

We are inviting people with intellectual disabilities who are related to IVASS, the professionals who care for them and their families.

VOLUNTARY PARTICIPATION

Your participation in this research is completely voluntary. You can decide to participate or not.

WHAT ACTIVITIES WILL BE CARRIED OUT - INVESTIGATION PROCEDURES

We request your participation in a participatory workshop session in which various team activities will be carried out to identify barriers, facilitators and preferences regarding the design of technologies for the promotion of physical activity in people with intellectual disabilities.

BENEFIT

The results of this study will serve to expand knowledge on relevant aspects of technology design for the promotion of physical activity in people with intellectual disabilities.

If you participate in this research, your participation will likely help us identify key issues from your experience.

COSTS AND FINANCING

The development of the activities proposed in this protocol will not imply an economic cost to the participants. All costs will be covered by the MOVE-IT research project, funded by the European Commission through the competitive call for ERASMUS + projects.

RISKS ASSOCIATED WITH THE RESEARCH

There are no physical or psychological risks involved in participating in this research.

CONFIDENTIALITY

The information collected in this study is done anonymously, not including information on the identification of the participants. All information collected by this research project will be kept confidential and will only be accessed by members of the project's research team. The identity of the participants in this research will never be shared. All information collected will be kept confidential. The collection, storage, treatment and access to data will be carried out in compliance with current data protection regulations, the Organic Law on Data Protection and Guarantee of Digital Rights (LOPDGDD) and the General Data Protection Regulations (RGPD).

SHARING THE RESULTS

The knowledge generated in this research will be shared with you if you wish. In order for the results of this study to be accepted and integrated into the body of knowledge of the scientific community, they will be published in high-impact scientific journals and international conferences in the area of medical informatics, such as the Journal of Medical Internet Research (JMIR), International Journal of Medical Informatics (IJMI), Medical Informatics Europe (MIE2021), or congresses in the field of MS such as ECTRIMS.

RIGHT TO REFUSE OR WITHDRAW

You do not have to participate in this research.

WHO TO CONTACT

If you have any questions you can ask them by contacting:

Dr. Vicente Traver Salcedo

Direction

Phone:

E-mail:

Signed: Dr. Vicente Traver

This proposal has been reviewed and approved by the Ethics Committee of the Universitat Politècnica de València.

Annex VIII: Informed consent study III

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

INFORMED CONSENT OF THE PARTICIPANT

Mr./Mrs. , hereinafter, the participant, of years of age, domiciled in , and DNI/Passport, , acting on their own behalf or as father, mother, legal guardian or representative of Ms./Ms. , residing in and ID , having been sufficiently informed by: Mr./Mrs. , hereinafter the researcher,

I DECLARE

a) That I have been sufficiently informed about:

   1. The objectives of the MOVE-IT Research Project, which is carried out in collaboration between the Polytechnic University of Valencia and the Valencian Institute of Socio-Health Care, hereinafter the project, as well as the technology and methodology to be used in it.
   2. The tasks to be carried out by the participant and their conditions.
   3. The use that will be given to the information obtained through the collaboration of the participant.

b) That my participation is completely voluntary and free of charge and that I can withdraw from the study at any time, without having to offer any explanations.

c) That I have read and know the content of this document, I understand the commitments that I assume and I expressly accept them.

d) That I have read and understand all the basic and detailed information that in relation to the processing of my personal data or that of my representative will be carried out by the Universitat Politècnica de València.

And, therefore, I sign this informed consent, in duplicate, voluntarily to express my desire to participate in this study related to the research project.

By signing this consent I do not waive any of my rights. I will receive a copy of this consent to keep for future reference.

Signature of the participant, Father, Mother, Guardian or Legal Representative of the minor:

Name of the researcher responsible for the Project: Dr. Vicente Traver Salcedo

DNI of the responsible researcher:

Identification of the Group/Institute/Center/Others responsible for the investigation:

KNOW-ITACA

Contact address of the researcher responsible for the research:

In case of necessarily using personal data and not being anonymized, you can obtain information on the treatment and exercise your rights before the Data Protection Officer.

Contact details of the UPV data protection delegate:

- E-mail:dpd@upv.es
- Address: General Secretariat, Polytechnic University of Valencia, Camí de Vera, s/n, 46022-València.

The participant has the right to request from the person responsible for the treatment access to the personal data related to the interested party, and its rectification or deletion, or the limitation of its treatment, or to oppose the treatment, as well as the right to data portability.

Signature of the investigator:

Annex IX: Information Sheet for the participant (Participatory Workshop – Study IV)

Protocol Title: Identification of physical activity habits and use of technology among people with intellectual disabilities (MOVE-IT) (STUDY IV)

This Informative Document is addressed to people who care for people with intellectual disabilities and meet the inclusion criteria for this study, inviting them to participate in the research proposed in this project.

Principal investigator: Dr. Vicente Traver (Polytechnic University of Valencia)

Information about the project

My name is Vicente Traver Salcedo, University Professor at the Polytechnic University of Valencia, director of the SABIEN research group of the ITACA research institute, and head of the project. We are investigating the barriers, facilitators and educational needs to use technologies to promote physical activity among people with intellectual disabilities in the Valencian Community. Before deciding on your participation, read this document carefully and request any additional information you deem appropriate, it is important that you know and understand all aspects of the project. You can talk to someone you feel comfortable with about the research

Before giving your consent, it is important that you know and understand the aspects of the project, for which you should read the following information slowly. Once you have understood the project and if you wish to participate, then you will be asked to participate in a participatory workshop session in which various team activities will be developed with the aim of establishing barriers, needs and preferences in terms of design aspects. technological solutions for the promotion of physical activity.

You can withdraw your consent at any time.

Tell us if you have questions or need more information. Feel free to ask about any aspect that helps you clarify your doubts about it.

PROJECT OBJECTIVES

People with intellectual disabilities tend to have lower levels of physical activity compared to the general adult population and have a higher incidence of obesity. Some estimates establish that 50% of people with intellectual disabilities follow a sedentary lifestyle, presenting a low level of physical activity in 40% of cases. Sedentary lifestyle and these low levels of physical activity lead to problems that affect Their independence.

The objective of study IV of the MOVE-IT project is to identify the potential barriers, facilitators, needs and training preferences in support of the use of technologies for the promotion of physical activity of people who support/care for people with intellectual disabilities in the community. Valencian Community.

SELECTION OF PARTICIPANTS

We are inviting professionals/relatives of people with intellectual disabilities who are related to IVASS.

VOLUNTARY PARTICIPATION

Your participation in this research is completely voluntary. You can decide to participate or not.

WHAT ACTIVITIES WILL BE CARRIED OUT - INVESTIGATION PROCEDURES

We request your participation in a participatory workshop session in which various team activities will be carried out to identify barriers, facilitators, educational needs and preferences regarding the use of technologies in the promotion of physical activity in people with intellectual disabilities.

BENEFIT

The results of this study will serve to expand knowledge about the barriers and facilitators from the point of view of the professional and the person who cares for people with intellectual disabilities in the use of technology to promote physical activity.

If you participate in this research, your participation will likely help us identify key issues from your experience.

COSTS AND FINANCING

The development of the activities proposed in this protocol will not imply an economic cost to the participants. All costs will be covered by the MOVE-IT research project, funded by the European Commission through the competitive call for ERASMUS + projects.

RISKS ASSOCIATED WITH THE RESEARCH

There are no physical or psychological risks involved in participating in this research.

CONFIDENTIALITY

The information collected in this study is done anonymously, not including information on the identification of the participants. All information collected by this research project will be kept confidential and will only be accessed by members of the project's research team. The identity of the participants in this research will never be shared. All information collected will be kept confidential. The collection, storage, treatment and access to data will be carried out in compliance with current data protection regulations, the Organic Law on Data Protection and Guarantee of Digital Rights (LOPDGDD) and the General Data Protection Regulations (RGPD).

SHARING THE RESULTS

The knowledge generated in this research will be shared with you if you wish. In order for the results of this study to be accepted and integrated into the body of knowledge of the scientific community, they will be published in high-impact scientific journals and international

conferences in the area of medical informatics, such as the Journal of Medical Internet Research (JMIR), International Journal of Medical Informatics (IJMI), Medical Informatics Europe (MIE2021), or congresses in the field of MS such as ECTRIMS.

RIGHT TO REFUSE OR WITHDRAW

You do not have to participate in this research.

WHO TO CONTACT

If you have any questions you can ask them by contacting:

Dr. Vicente Traver Salcedo

Direction

Phone:

E-mail:

Signed: Dr. Vicente Traver

This proposal has been reviewed and approved by the Ethics Committee of the Universitat Politècnica de València.

Annex X: Informed consent study III

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

INFORMED CONSENT OF THE PARTICIPANT

Mr./Mrs. , hereinafter, the participant, of years of age, domiciled in , and DNI/Passport, , acting on their own behalf or as father, mother, legal guardian or representative of Ms./Ms. , residing in and ID , having been sufficiently informed by: Mr./Mrs. , hereinafter the researcher,

I DECLARE

a) That I have been sufficiently informed about:

   1. The objectives of the MOVE-IT Research Project, which is carried out in collaboration between the Polytechnic University of Valencia and the Valencian Institute of Socio-Health Care, hereinafter the project, as well as the technology and methodology to be used in it.

   2. The tasks to be carried out by the participant and their conditions.

   3. The use that will be given to the information obtained through the collaboration of the participant.

b) That my participation is completely voluntary and free of charge and that I can withdraw from the study at any time, without having to offer any explanations.

c) That I have read and know the content of this document, I understand the commitments that I assume and I expressly accept them.

d) That I have read and understand all the basic and detailed information that in relation to the processing of my personal data or that of my representative will be carried out by the Universitat Politècnica de València.

And, therefore, I sign this informed consent, in duplicate, voluntarily to express my desire to participate in this study related to the research project.

By signing this consent I do not waive any of my rights. I will receive a copy of this consent to keep for future reference.

Signature of the participant, Father, Mother, Guardian or Legal Representative of the minor:

Annex XI: Consent to the processing of personal data

UNIVERSITAT POLITÈCNICA DE VALÈNCIA

CONSENT TO THE PROCESSING OF PERSONAL DATA

Mr./Mrs. , hereinafter, the participant, of years of age, domiciled in , and DNI/Passport, , acting on their own behalf or as father, mother, legal guardian or representative of Ms./Ms. , residing in and ID , having been sufficiently informed by: Mr./Mrs. , hereinafter the researcher,

I DECLARE

a) That I have been sufficiently informed about:

- The objectives of the MOVE-IT Research Project, which is carried out in collaboration between the Polytechnic University of Valencia and the Valencian Institute of Socio-Health Care, hereinafter the project, as well as the technology and methodology to be used in it.
- The tasks to be carried out by the participant and their conditions.
- The use that will be given to the information obtained through the collaboration of the participant.
- The treatment and custody of the data obtained with respect to the privacy of the participant, anonymously and confidentially and in accordance with current data protection regulations. Specifically, in accordance with Regulation (EU) 2016/679 of the European Parliament and of the Council, of April 27, 2016, regarding the protection of natural persons with regard to the processing of personal data and the free circulation of these data .
- The rights of access, rectification, deletion, limitation, opposition and portability that I may exercise by request to the responsible researcher at the contact address that appears in this document, without affecting the legality of the treatment based on consent. prior to his withdrawal.

- The personal data obtained in the study object of the project, which may be used in other studies of the Universitat Politècnica de València in the scientific and/or academic field. The management of the data will always be anonymous and these data may not be transferred to another body without my express consent and I do not grant it in this act.
- The right to file a claim about the use of this data before a control authority.

b) That my participation is completely voluntary and free of charge and that I can withdraw from the study at any time, without having to offer any explanations.

c) That I have read and know the content of this document, I understand the commitments that I assume and I expressly accept them.

d) That I have read and understand all the basic and detailed information that in relation to the processing of my personal data or that of my representative will be carried out by the Universitat Politècnica de València.

And, therefore, I sign this informed consent, in duplicate, voluntarily to express my desire to participate in this study related to the research project.

By signing this consent I do not waive any of my rights. I will receive a copy of this consent to keep for future reference.

Signature of the participant, Father, Mother, Guardian or Legal Representative of the minor:

Name of the researcher responsible for the Project: Dr. Vicente Traver Salcedo

DNI of the responsible investigator: 22569529c

Identification of the Group/Institute/Center/Others responsible for the investigation:

KNOW-ITACA

Contact address of the researcher responsible for the research: ITACA-SABIEN, Polytechnic City of Innovation Building 8G Access B Floor 1.

In case of necessarily using personal data and not being anonymized, you can obtain information on the treatment and exercise your rights before the Data Protection Officer.

Contact details of the UPV data protection delegate:

- E-mail:dpd@upv.es
- Address: General Secretariat, Polytechnic University of Valencia, Camí de Vera, s/n, 46022-València.

Data retention period: 48 months.

The participant has the right to request from the person responsible for the treatment access to the personal data related to the interested party, and its rectification or deletion, or the limitation of its treatment, or to oppose the treatment, as well as the right to data portability.

Signature of the researcher:.

INFORMATION ON DATA PROTECTION

Responsible for the treatment: The entity Universitat Politècnica de València (hereinafter UPV) with address at Camino de Vera s/n, 46022 Valencia and/or email address dpd@upv.es is responsible for processing the data of the Interested person contained in this authorization document and those derived from their voluntary participation in the study, tests and trials in which said Interested Person appears developed by the UPV.

Treatment purposes: Participation in the study, tests and trials in which the Interested person appears, manage and develop their participation, result of the study, tests and trials within the framework of the project.

Legal basis of the treatment: The legal basis for data processing is this agreement, the unequivocal consent of the Interested Person, expressed by reading and signing this document, as well as compliance with legal obligations, such as, for example, in the event that must prove the representation of third parties or proceed to the conservation of their data during the limitation period of the actions. Your data may be processed and stored based on the legitimate interest of serving the legitimate purposes of the UPV.

Recipients of the data: Recipient categories can be third entities related to the UPV and always within the scientific field. They may be other entities required by law, if applicable. It can be the beneficiary entity of the study.

International data transfers: The data of the interested person will not be subject to international transfer.

Data retention period: The personal data of the interested person, obtained during the study, will be kept during its development and, once finished, the data will be kept during the legal periods for the fulfillment of legal obligations and the attention of possible responsibilities.

Once the legal retention period has elapsed, your data will be kept indefinitely based on the legitimate interest of the UPV.

Rights: The interested person can exercise their rights of access, rectification, cancellation or deletion and opposition, limitation of treatment, right not to be the subject of a decision based solely on automated treatment, including profiling and portability of personal data, as well as the right to withdraw consent at any time, without affecting the legality of the treatment based on the consent prior to its withdrawal, by sending a written request to the following postal address: Data Protection Delegate, General Secretary, Camino de Vera s/n, Universidad Politécnica de Valencia, 46022 Valencia and/or electronically dpd@upv.es , providing a copy of your DNI/NIF or valid legal document to prove your identity.

AEPD contact information: In any case, the interested party is informed of the right to file a claim with a Control Authority (in Spain, the Spanish Agency for Data Protection or AEPD), in particular, when they consider that they have not obtained satisfaction in the exercise of their rights. To do this, you can contact the AEPD through www.agpd.es or at the following address C/ Jorge Juan, 6. 28001 – Madrid, and/or contact telephone number 912 663 517.

Prior to submitting said claim to the Spanish Data Protection Agency and on a completely voluntary basis, the interested party may contact the UPV Data Protection Officer at the following email address dpd@upv.es .