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Psychosocial impact of powered wheelchairs and its repercussion on the quality of life of their users

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Artigo científico

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1. This study was already presented in the XVIII congress of the Portuguese Society of Physical and Rehabilitation Medicine, in March 2018, in Coimbra.

2. Some subjects of this study were submitted in the 4th International Health Congress, in Leiria, and the 12th International Society of Physical and Rehabilitation Medicine World Congress, in Paris, and awaits acceptance.

Table of Contents

LIST OF ABBREVIATIONS 4

LIST OF TABLES 5

ABSTRACT 6

RESUMO 7

INTRODUCTION 8

AIMS 11

MATERIALS AND METHODS 12

  STUDY DESIGN 12

  PARTICIPANTS 12

  PROCEDURE 12

  MATERIALS 13

  STATISTICAL ANALYSIS 14

RESULTS 16

  SAMPLE DESCRIPTION 16

  DATA ANALYSIS 18

DISCUSSION 27

CONCLUSIONS 31

ACKNOWLEDGEMENTS 32

REFERENCES 33

APPENDIX 36

List of abbreviations

AT – Assistive technology

CHUC – Coimbra Hospital and Universitary Centre

MW – Manual wheelchair

PAPM – Activities and Participation Profile Related to Mobility

P-PIADS – Portuguese version of Psychosocial Impact of Assistive Devices Scale

PMD – Powered mobility device

PW – Powered wheelchair

QoL – Quality of life

QUEST – Quebec User Evaluation of Satisfaction with Assistive Technology

SD – Standard deviation

List of tables

Table 1 – Sample description (n=30) 17

Table 2 – Frequency of problems with each of the PW’s components 18

Table 3 – PAPM, P-PIADS and QUEST scores 19

Table 4 – Most important items of the QUEST scale according to the users.......................... 20

Table 5 – Relation between PAPM, P-PIADS and QUEST scores (n=30)............................. 21

Table 6 – Relation between PAPM, P-PIADS and QUEST scores and age, number of years on the current PW and time since diagnosis (n=30).. 21

Table 7 – Comparison of PAPM, P-PIADS and QUEST scores, age, number of years on the current PW and time since diagnosis, according to previous AT 23

Table 8 – Comparison of PAPM, P-PIADS and QUEST scores, age, number of years on the current PW and time since diagnosis, according to having or not received training oriented by professionals with the current PW 26

Abstract

Introduction: There is a growing prevalence of disability worldwide, which indicates an increasing number of persons who might benefit from assistive technologies. The purpose of this study is to assess the psychosocial impact of a specific type of assistive technology, the powered wheelchair, on the social participation of its users, evaluating its potential repercussions on their quality of life. **Materials and methods:** From May to October 2017, 30 powered wheelchair users were interviewed using the Quebec User Evaluation of Satisfaction with Assistive Technology (QUEST) scale, the Psychosocial Impact of Assistive Devices Scale (PIADS) and the Activities and Participation Profile Related to Mobility (PAPM) scale, in addition to some demographic, clinical and powered wheelchair related questions. Descriptive and correlational statistics were performed to analyse the data. **Results:** There was an average moderate limitation in participation (PAPM mean score of 1.72), with the best participation profiles being among the most satisfied users (with the assistive technologies and/or the related services). A worst participation profile was noted among the users who had their current wheelchairs for a longer period. There was no relation between the psychosocial impact of the powered wheelchairs and the users' participation. PIADS scores showed an overall positive impact of the powered wheelchairs in all subscales (competence, adaptability and self-esteem). The psychosocial impact in terms of adaptability was higher among users who transitioned from a manual wheelchair to a powered wheelchair compared to those who already had a powered wheelchair previously. In average, the participants were quite satisfied with both the assistive technologies and the related services, with the lowest QUEST scores belonging to those who had been using their wheelchairs for a longer period of time. **Discussion and conclusions:** There was an overall positive psychosocial impact of the powered wheelchairs, and, potentially, an increase in the quality of life of the users. More studies are needed, specifically to evaluate the impact of the environmental barriers on the social participation and on the quality of life of powered wheelchair users.

Keywords**:** assistive technologies, self-help devices, powered wheelchairs, psychosocial impact, social participation, quality of life

Resumo

Introdução: Há uma prevalência crescente de incapacidade a nível mundial, o que significa um número crescente de pessoas que poderão beneficiar de produtos de apoio. O objetivo deste estudo é avaliar o impacto psicossocial de um tipo específico de produto de apoio, a cadeira de rodas elétrica, na participação social dos seus utilizadores, avaliando o seu impacto potencial na sua qualidade de vida. **Materiais e métodos:** De maio a outubro de 2017, 30 utilizadores de cadeiras de rodas elétricas foram entrevistados usando as escalas Avaliação da Satisfação em relação a uma Ajuda Técnica (ESAT), Escala do Impacto Psicossocial das Tecnologias de Apoio (PIADS) e Perfil de Atividades e Participação relacionado com a Mobilidade (PAPM), juntamente com questões demográficas, clínicas e relacionadas com a cadeira de rodas. Análise estatística descritiva e de correlação foi realizada para analisar os dados. **Resultados:** Verificou-se uma limitação moderada em termos de participação (resultado médio do PAPM de 1,72), com os melhores perfis de participação pertencendo aos utilizadores mais satisfeitos (com os produtos de apoio e/ou serviços relacionados). Um pior perfil de participação foi encontrado entre os utilizadores que tinham a sua cadeira de rodas atual há mais tempo. Não foi encontrada relação entre o impacto psicossocial das cadeiras de rodas elétricas e a participação dos utilizadores. Os resultados do PIADS mostraram um impacto positivo, em termos globais, das cadeiras de rodas elétricas a nível de todas as subescalas (competência, adaptabilidade e autoestima). O impacto psicossocial em termos de adaptabilidade foi maior nos utilizadores que transitaram de uma cadeira de rodas manual para uma elétrica comparativamente aos que já tinham uma cadeira de rodas elétrica previamente. Em média, os participantes estavam bastante satisfeitos com tanto os produtos de apoio como com os serviços relacionados, sendo que as pontuações mais baixas do ESAT pertenciam aos utilizadores que tinham a cadeira de rodas atual há mais tempo. **Discussão e conclusões:** Houve um impacto psicossocial global positivo das cadeiras de rodas elétricas, e, potencialmente, um aumento na qualidade de vida dos utilizadores. Mais estudos são necessários, especificamente para avaliar o impacto das barreiras arquitetónicas a nível da participação social e da qualidade de vida dos utilizadores de cadeiras de rodas elétricas.

Palavras-chave: produtos de apoio, cadeiras de rodas elétricas, impacto psicossocial, participação social, qualidade de vida

Introduction

The world’s population is ageing. This global ageing has a major influence on disability trends, considering there is a higher risk of disability in older people. Therefore, due to this ageing population, as well as the global increase in chronic health conditions, there is a growing prevalence of disability worldwide.[1]

The term disability refers to difficulties encountered in any of the three areas of human functioning, specifically impairments, activity limitations or participation restrictions. Therefore, disability results from the interaction between health conditions (and consequent impairments) and contextual factors, such as attitudinal and environmental barriers that hamper a complete and effective participation in society on an equal basis with others.[1]

Assistive technologies (ATs) can be defined as any product (including devices, equipment, instruments, technology and software) specifically produced to prevent, compensate, monitor, alleviate or neutralize any obstacle, activity limitation and participation restriction. They are intended for all the persons with permanent or temporary disability.[2] This disability, as previously stated, due to the interaction with several barriers, may prevent a complete and efficient participation in society.[3] The goal of the ATs is to improve the users’ functioning, allowing greater autonomy and independence, thus helping to dominate the surrounding environment more successfully.[4]

Several studies showed positive effects of the use of ATs on activity and participation of adults with mobility problems,[5] as well as on psychosocial factors.[4,6] A study evaluating specifically the group of standing devices, for example, showed a generally positive psychosocial impact for the user.[7] Relative to the use of wheelchairs in general, Rushton and collaborators showed that, overall, participants were satisfied with their participation outcomes.[8] Another study, by Devitt, Chau and Jutai, demonstrated a positive impact of wheelchair use on the quality of life (QoL) of persons with multiple sclerosis.[9]

Regarding powered mobility devices (PMDs) in particular, Lofqvist and collaborators concluded that powered wheelchairs (PWs) and scooters increased participation frequency and easiness in mobility-related participation in daily life, in addition to increasing the users' independence in mobility both outdoors and indoors.[10] Moreover, Samuelsson and Wressle concluded that these PMDs improved the users' daily routines, ability to engage in mobility-related activities and social participation, increasing their independence, safety perception and self-esteem.[11] Exclusively concerning PWs, Evans and collaborators demonstrated beneficial effects of these ATs for a sample of older adults with disability, including an increase in their independence and well-being.[12] A previous study had presented congruent results, demonstrating a positive impact of PWs on the QoL of persons with stroke.[13] Moreover, a different study suggested that the transition from a manual wheelchair (MW) to a PW increased the occupational performance, competence, adaptability and self-esteem of severely impaired persons.[14]

On the other hand, studies also showed some negative consequences of the use of an AT, which can be stigmatizing for its user on account of identifying him/her as having a disability.[15,16] Additionally, users may feel dependent on their ATs and, consequently, vulnerable, powerless and frustrated if they don't work as expected.[6]

Considering the PW in particular, Fehr, Langbein and Skaar showed that a substantial number of users had difficulty operating and steering their PWs, despite completion of training, which hinders a truly independent mobility.[17] According to Evans and collaborators, although the PWs proved useful to most of the users, some of them reported difficulties using them due to environmental barriers.[12] Likewise, a systematic review suggested that the environmental barriers had a negative impact on the engagement in independent occupations for PMD users, in addition to increasing the risk of injury or accident.[18]

More studies are needed to corroborate the existing ones and to increase our current understanding of the impact of ATs on the lives of persons with disabilities.

In this regard, the purpose of this study is to assess the psychosocial impact of a specific type of AT, the PW, and its effect on the social participation of the users, evaluating its potential repercussions on their QoL. On this matter, although the impact of the PW on the QoL won't be directly evaluated in this study, it has been previously shown that there is a relation between social participation and QoL.[19] Secondarily, relations between the users' participation profile and other variables, such as age, time since diagnosis, number of years on the current PW, users' satisfaction, previous AT and having or not received training with the current PW will also be evaluated.

This study addresses only one type of AT in order to obtain more specific and deeper knowledge about it, rather than wider knowledge about the generality of ATs.

The results of this study will help researchers and clinicians understand the users' view on the impact of PWs on their lives and, also, on the AT services. This will allow an improvement on the quality of such services and on the characteristics of the PWs, based on the users' preferences and needs. This, in turn, will hopefully lead to a more positive impact of the PWs on the users' lives, allowing a better interaction between the user and the surrounding environment and, consequently, promoting participation and QoL.

Aims

The main aims of this study are the following:

1. To evaluate the psychosocial impact of the PW on the social participation of its users, accessing the potential effect on their QoL;
2. To assess the relation between the user’s satisfaction and his/her participation profile;
3. To determine the effects of the transition from a MW to a PW.

Materials and Methods

Study design

This is an observational, descriptive, cross-sectional study, based on the application of questionnaires to PW users in order to obtain their perceptions regarding their AT and its impact on their lives.

This study was approved by the ethics committee of Coimbra Hospital and Universitary Centre (CHUC), having the following reference: CHUC-054-17. The document of approval is shown in the Appendix section (Appendix 1).

Participants

We resorted to a convenience sample of 30 PW users who were recruited from CHUC and other institutions in Coimbra whose patients were PW users, specifically, the Cerebral Palsy Association of Coimbra and the Occupational Activities Centre of São Silvestre. The selection of the participants was based on the following inclusion criteria: aged between 18 and 64 years old, with ability to understand written and spoken Portuguese and that had been using their current PWs for at least 1 year during at least 4 hours per day.

Procedure

Data was collected between May 2017 and October 2017, resorting to several questionnaires, specifically, the validated Portuguese version of Quebec User Evaluation of Satisfaction with Assistive Technology (QUEST) scale (version 2.0)[20] (Appendix 2), the validated Portuguese version of Psychosocial Impact of Assistive Devices Scale (P-PIADS)[21] (Appendix 3) and the

Activities and Participation Profile Related to Mobility (PAPM) scale[22] (Appendix 4), in addition to some demographic, clinical and PW related questions (Appendix 5). The participants responded to these questionnaires by interview, after giving their informed consent to participate in this study.

Materials

The QUEST 2.0 (Appendix 2) is a 12-item questionnaire whose purpose is to evaluate the user's satisfaction with his/her AT (regarding its dimensions, weight, ease of adjustment, safety, durability, ease of use, comfort and effectiveness) and the related services (specifically, delivery, repairs and servicing, professional services and follow-up services). The participant rates his/her satisfaction regarding each of the 12 items using a scale of 1 to 5 and, afterwards, chooses the 3 items he/she considers to be the most important ones.[23]

The PIADS (Appendix 3) is a 26-item, self-report questionnaire that evaluates the effects of an AT on the functional independence, well-being and QoL of its user. It assesses psychosocial factors which includes both factors within the individual and factors attributable to the environment that affect the psychological adjustment of persons with disabilities. PIADS comprises 3 subscales, specifically, competence, adaptability and self-esteem. The competence subscale, composed of 12 items, is related to the perceived impact of the AT on the user's competence, performance and productivity. The adaptability subscale, with 6 items, assesses the user's eagerness to try new things and take risks and his/her ability to take advantage of opportunities, thus evaluating the enabling aspects of the AT regarding participation. Finally, the self-esteem subscale, composed of 8 items, measures the perceived impact of the AT on self-confidence and emotional well-being. For each item, a score is attributed ranging from -3 (maximum negative impact) to +3 (maximum positive impact). The midpoint, 0, indicates no perceived impact.[24] For every item, the impact of the current AT, which in this specific study is always a PW, is being compared to either the previous AT used by the participant or to not using an AT et al, depending on the participant's previous situation.

The PAPM (Appendix 4) is an 18-item scale designed to measure the social participation of community dwelling adults. It assesses the difficulties experienced by individuals in performing certain daily life activities that may be conditioned by mobility. These activities are related to social interactions and relations, education, employment, money management and social and community life. For each item, the participant attributes a score ranging from 0 (no limitation/restriction) to 4 (complete limitation/restriction), except for the activities that do not apply to the individual's life, which are not rated. As a result, an individual's participation profile is obtained.[22]

In addition to these scales, the participants replied to a questionnaire comprising some demographic, clinical and AT related questions (Appendix 5). The demographic information acquired consisted of age, gender and occupation (before and after starting to use the current PW). Clinically, the participants were questioned about their medical condition and the time of its diagnosis. Regarding the AT, the questions included number of years on the current PW, number of hours using it per day, technical problems experienced with the current PW, if the user had received training oriented by professionals with the current PW and which type of AT the user had before the current PW.

Statistical analysis

The data analysis was performed resorting to the software "IBM SPSS Statistics (version 24)". Descriptive statistics, including mean, standard deviation, range, frequency and percentage, were used to characterize the sample in terms of age, gender, occupation (before and after starting to use the current PW), medical condition and time since diagnosis, number of years on the current PW, number of hours using it per day, technical problems experienced with the current PW, if the user had received training oriented by professionals with the current PW and which type of AT the user had before the current PW. Furthermore, descriptive statistics were also used to describe the results of the QUEST, P-PIADS and PAPM and their subscales. Cronbach's Alpha of QUEST, P-PIADS and PAPM were analysed to assure their internal consistency in this sample. Testing for normality was executed using Kolmogorov-Smirnov test.

Correlations between QUEST (total and subscales), P-PIADS (total and subscales), PAPM, age, time since diagnosis and number of years on the current PW were carried out through Pearson's Coefficient.

Differences between groups, specifically, between users who had a MW as their previous AT compared to those who had a different PW and between users who had received training with the current PW compared to those who had not, were evaluated using Student´s t-test for independent samples. The groups were compared in terms of the scores obtained in each of the scales and subscales and other variables such as age, time since diagnosis and number of years on the current PW. Cross-tabulation was used to describe the relationship between the users' previous ATs and whether they had received training with the current PW.

Results

Sample description

From a total of 30 participants, 18 (60%) were men. The mean age of the sample was 40.63 years old, with ages ranging from 23 to 64 years old. Regarding the occupation of the participants, 22 (73.3%) were unemployed while the other 8 (26.7%) were working before the beginning of use of the current PW. The number of unemployed participants increased to 28 (93.3%) after starting to use the current PW, with 2 of the participants (6.7%) remaining employed (one of them changed to a different job). None of the participants were students.

Cerebral palsy was the most prevalent diagnosis (*n*=11 (36%)) in the sample, followed by muscular dystrophy (*n*=6) and spinal cord injury (*n*=4). Other diagnosis included lower limb amputation, ataxia, multiple sclerosis and stroke. The time since diagnosis ranged from 3 to 54 years, with an average time of 25.97 years between the onset of the medical condition and the date of the survey.

Regarding the PW, all the participants were using their current PW for at least 1 year, to a maximum of 15 years, with an average time of use of the current PW of 5.53 years. The average duration of use of the current PW per day was 10.10 hours, ranging from a minimum of 4 to a maximum of 15 hours per day. Only 6 (20%) of the participants received training oriented by professionals with the current PW.

Relative to the AT used by the participants prior to the use of the current PW, the majority of them had a wheelchair – either a different PW, used by 20 (66.7%) of the participants, or a MW, used previously by 8 (26.7%) of them. One of the participants used crushes and another one didn’t use any AT prior to the current PW.

All the data regarding the characteristics of the sample (social, clinical and AT related) is presented in Table 1.

Table 1 – Sample description (*n*=30)

	n	**%**
Age (years) – mean 40.63 (SD 13.09)		
Gender		
Male	18	60
Female	12	40
Occupation before starting to use current PW		
Employed	8	26.7
Unemployed	22	73.3
Student	0	0
Occupation after starting to use current PW		
Employed	2	6.7
Unemployed	28	93.3
Student	0	0
Diagnosis		
Cerebral palsy	11	36.7
Muscular dystrophy	6	20
Spinal cord injury	4	13.3
Lower limb amputation	3	10
Ataxia	2	6.7
Multiple sclerosis	1	3.3
Stroke	1	3.3
Other*	2	6.7
Time since diagnosis (years) – mean 25.97 (SD 12.21)		
Years on the current PW – mean 5.53 (SD 3.87)		
Hours of use of current PW per day – mean 10.10 (SD 3.77)		
Training with current PW		
Yes	6	20
No	24	80
Previous AT		
Different PW	20	66.7
MW	8	26.7
Crutches	1	3.3
None	1	3.3

AT – assistive technology; MW – manual wheelchair; PW – powered wheelchair; SD – standard deviation.

* Juvenile hyaline fibromatosis and adrenoleukodystrophy (metabolic disease)

Twenty-four users experienced problems with at least one component of the current PW. The controller was the PW's component with which users had more problems (10 users reported problems with it), followed by the battery and the wheels (9 users each). The seat cushion and brakes were the components the fewer users had problems with (1 user each). Information relative to the problems with these and the other PW's components is detailed in Table 2.

Table 2 – Frequency of problems with each of the PW's components

PW's components	*n**	%
Armrests	3	10
Battery	9	30
Brakes	1	3.3
Controller	10	33.3
Wheels	9	30
Footplate	3	10
Motor	2	6.7
Seat cushion	1	3.3
Others	2	6.7

* Number of participants who had problems with the PW's component; PW – powered wheelchair.

Data analysis

According to the data obtained by the PAPM scale (PAPM Cronbach's Alpha in this sample was 0.90), there was an average moderate limitation in social participation, with a mean score of 1.72, ranging from a minimum of 0.58 (mild limitation) to a maximum of 3.00 (severe limitation), as demonstrated in Table 3.

Relative to the P-PIADS scores (P-PIADS Cronbach's Alpha in this sample was 0.93), the results showed that there was an overall positive psychosocial impact of the PWs, with an average P-PIADS total score of 1.37, ranging from 0.04 to 2.35. The average scores obtained from the subscales competence, adaptability and self-esteem were 1.39, 1.32 and 1.38, respectively, as also shown in Table 3.

Concerning the users' satisfaction, the data obtained by the QUEST scale (QUEST Cronbach's Alpha in this sample was 0.80) revealed that the participants were quite satisfied with both the AT and the related services (average scores of 4.34 and 4.05, respectively). The scores regarding the AT ranged from 3.25 to 5.00 whereas the ones related to the services ranged from 1.50 to 5.00. The total score ranged from 3.25 to 4.83, with a mean of 4.24 (Table 3). Relative to the items chosen by the participants as the most important ones, safety, comfort and ease of use were the most frequently selected ones, whereas the least chosen items were weight and ease of adjustment, as shown in Table 4**.**

Table 3 – PAPM, P-PIADS and QUEST scores

	Minimum	**Maximum**	**Mean**	**SD**
PAPM	0.58	3.00	1.72	0.69
P-PIADS competence	0.00	2.50	1.39	0.71
P-PIADS adaptability	0.00	2.83	1.32	0.81
P-PIADS self-esteem	0.00	2.25	1.38	0.57
P-PIADS total	0.04	2.35	1.37	0.63
QUEST AT	3.25	5.00	4.34	0.48
QUEST services	1.50	5.00	4.05	0.66
QUEST total	3.25	4.83	4.24	0.45

AT – assistive technology; PAPM – Activities and Participation Profile Related to Mobility; P-PIADS – Portuguese version of Psychosocial Impact of Assistive Devices Scale; QUEST – Quebec User Evaluation of Satisfaction with Assistive Technology; SD – standard deviation.

Table 4 – Most important items of the QUEST scale according to the users

QUEST items	*n**	%
Dimensions	4	13.3
Weight	0	0
Ease of adjustment	0	0
Safety	25	83.3
Durability	2	6.7
Ease of use	17	56.7
Comfort	24	80
Effectiveness	9	30
Delivery services	2	6.7
Repairs	3	10
Professional services	3	10
Follow-up services	1	3.3

* Number of participants that chose the item as one of the most important; QUEST – Quebec User Evaluation of Satisfaction with Assistive Technology.

The PAPM score was negatively correlated with all QUEST scores (total, AT and services), as demonstrated in Table 5, meaning the most satisfied users, with the AT and/or the related services, were the ones with a better performance in terms of social participation (with less limitations and, therefore, a lower PAPM score).

There was no correlation between any of the P-PIADS scores and the PAPM score (Table 5), showing no relation between the psychosocial impact of the PW and the user's participation profile.

As demonstrated in Table 6, the PAPM score was negatively correlated with age, indicating older users had a better participation profile compared to younger ones, contrary to what might have been expected. This may be explained, among other reasons, by the particular characteristics of the sample and will be further discussed in the Discussion section.

There was a positive correlation between the PAPM score and the number of years on the current PW, showing that the participants who were using their PWs for a longer period had more limitations in terms of social participation. There was no correlation between the time since diagnosis and the PAPM score. These relations are also shown in Table 6.

Table 5 – Relation between PAPM, P-PIADS and QUEST scores (*n*=30)

	PAPM		QUEST total		QUEST AT		QUEST services	
	r	***p***	***r***	***p***	***r***	***p***	***r***	***p***
PAPM	-	-	-0.449	**0.013**	-0.363	**0.049**	-0.383	**0.037**
P-PIADS competence	-0.096	0.615	0.269	0.150	0.335	0.070	0.059	0.758
P-PIADS adaptability	-0.012	0.615	0.143	0.450	0.221	0.240	-0.031	0.872
P-PIADS self-esteem	0.00	1.000	0.203	0.283	0.191	0.313	0.134	0.481
P-PIADS total	-0.053	0.782	0.237	0.207	0.291	0.119	0.058	0.759

AT – assistive technology; PAPM – Activities and Participation Profile Related to Mobility; P-PIADS – Portuguese version of Psychosocial Impact of Assistive Devices Scale; QUEST – Quebec User Evaluation of Satisfaction with Assistive Technology.

Table 6 – Relation between PAPM, P-PIADS and QUEST scores and age, number of years on the current PW and time since diagnosis (*n*=30)

	Age		Years on current PW		Time since diagnosis	
	r	***p***	***r***	***p***	***r***	***p***
PAPM	-0.584	**0.001**	0.409	**0.025**	-0.159	0.402
P-PIADS competence	0.217	0.249	0.056	0.768	-0.378	**0.039**
P-PIADS adaptability	0.157	0.407	0.032	0.865	-0.478	**0.008**
P-PIADS self-esteem	0.287	0.124	0.090	0.635	-0.225	0.233
P-PIADS total	0.238	0.206	0.064	0.739	-0.398	**0.030**
QUEST AT	0.481	**0.007**	-0.370	**0.044**	0.068	0.720
QUEST services	0.355	0.055	-0.363	**0.048**	0.219	0.244
QUEST total	0.519	**0.003**	-0.444	**0.014**	0.157	0.408

AT – assistive technology; PAPM – Activities and Participation Profile Related to Mobility; P-PIADS – Portuguese version of Psychosocial Impact of Assistive Devices Scale; PW – powered wheelchair; QUEST – Quebec User Evaluation of Satisfaction with Assistive Technology.

Relative to the P-PIADS scores, the time since diagnosis was negatively correlated with P-PIADS total, competence and adaptability scores, showing that there was a higher psychosocial impact on the users who had their disease for a shorter period, specifically in terms of competence and adaptability. There was no correlation between the self-esteem score and the time since diagnosis. There was also no correlation between any of the P-PIADS scores and neither age nor the number of years on the current PW. All these relations are also shown in Table 6.

As shown previously in Table 5, no correlation was found between any of the P-PIADS scores and the QUEST scores, showing no relation between the psychosocial impact of the PW and the user’s satisfaction.

Concerning the QUEST scores, and as demonstrated in Table 6, the QUEST total and AT scores were positively correlated with the age of the participants, which means older users were more satisfied with their ATs than younger ones. Relative to the users’ satisfaction with the services, there was no correlation between the score and the users’ age.

The number of years on the current PW was negatively correlated with all the QUEST scores (total, AT and services), suggesting that participants who had been using their PW for a longer period of time were less satisfied with both the AT and the related services. There was no correlation between the time since diagnosis and any of the QUEST scores (Table 6).

On another matter, taking into consideration the previous ATs used by the participants, as previously stated, 8 (26.7%) of the participants used a MW as their prior AT, while 20 (66.7%) used a different PW before starting to use the current one. As demonstrated in Table 7, the individuals who had a MW as their previous AT had a higher score on P-PIADS adaptability subscale compared to those with a previous PW (1.85 vs 1.10, p=0.02), which demonstrates a higher psychosocial impact of the new AT in terms of adaptability in the users who transitioned from a MW to a PW compared to those who already had a PW previously. Despite the lack of statistical significance, all the others P-PIADS scores (competence, self-esteem and total) were also higher among users who had a previous MW compared to those who had a different PW (1.72 vs 1.29, *p*=0.128; 1.64 vs 1.26, *p*=0.110; 1.73 vs 1.24, *p*=0.053, respectively).

Table 7 – Comparison of PAPM, P-PIADS and QUEST scores, age, number of years on the current PW and time since diagnosis, according to previous AT

	Previous AT	Mean	SD	*p*
PAPM	MW (*n*=8)	1.55	0.76	0.314
	PW (*n*=20)	1.85	0.67	
P-PIADS competence	MW (*n*=8)	1.72	0.79	0.128
	PW (*n*=20)	1.29	0.59	
P-PIADS adaptability	MW (*n*=8)	1.85	0.95	**0.020**
	PW (*n*=20)	1.10	0.62	
P-PIADS self-esteem	MW (*n*=8)	1.64	0.48	0.110
	PW (*n*=20)	1.26	0.58	
P-PIADS total	MW (*n*=8)	1.73	0.70	0.053
	PW (*n*=20)	1.24	0.53	
QUEST AT	MW (*n*=8)	4.25	0.65	0.592
	PW (*n*=20)	4.36	0.42	
QUEST services	MW (*n*=8)	4.09	0.53	0.712
	PW (*n*=20)	3.99	0.73	
QUEST total	MW (*n*=8)	4.20	0.59	0.839
	PW (*n*=20)	4.24	0.41	
Age (years)	MW (*n*=8)	49.00	13.07	**0.026**
	PW (*n*=20)	36.90	11.98	
Years on current PW	MW (*n*=8)	4.88	5.06	0.462
	PW (*n*=20)	6.10	3.42	
Time since diagnosis (years)	MW (*n*=8)	14.25	9.56	**0.001**
	PW (*n*=20)	28.80	9.05	

AT – assistive technology; MW – manual wheelchair; PAPM – Activities and Participation Profile Related to Mobility; P-PIADS – Portuguese version of Psychosocial Impact of Assistive Devices Scale; PW – powered wheelchair; QUEST – Quebec User Evaluation of Satisfaction with Assistive Technology; SD – standard deviation.

Regarding the PAPM score, it suggested that there was a better performance in terms of social participation (less limitations) among the users who previously had a MW compared to the ones with a previous PW, although this wasn't statistically significant (1.55 vs 1.85, *p*=0.314). The QUEST scores (total, AT and services) were very similar between the two groups, with no statistically significative differences (Table 7).

Other differences among these groups were the age and the time since diagnosis, with the users who had a previous PW being, in average, younger (36.90 vs 49.00, *p*=0.026) and having their diseases for a longer period (28.80 vs 14.25, *p*=0.001) compared to the ones with a prior MW. There were no statistically significative differences between the two groups regarding the number of years on the current PW (Table 7).

Considering there was only one participant whose prior AT was crutches and another one who didn't use an AT previously, no conclusion should be drawn from the data relative to these two participants.

On a different note, the sample can also be divided in two groups based on having received training oriented by professionals with the current PW or not. From the 6 participants that received training (20% of the total sample), only 2 of them had a MW as their previous AT, whereas the other 4 had a different PW prior to the current one. This means only 25% of the users who transitioned from a MW to a PW received training, while 20% of those who already had a PW previously also received it.

As shown in Table 8, the participants that received training had a higher PAPM score (a worst participation profile, with more limitations) compared to the users who didn't receive it (2.25 vs 1.59, *p*=0.035). Relative to the QUEST, the services score was higher among users who received training compared to those who didn't, although there was no statistical significance (4.33 vs 3.98, *p*=0.245), suggesting a higher satisfaction with the services provided in the group that received training. The other QUEST scores (total and AT) were similar among the two groups. Regarding the P-PIADS, the group that received training had a higher score in the adaptability subscale compared to the group that didn’t, despite the absence of statistical significance (1.50 vs 1.27, p=0.543). The remaining P-PIADS scores (total, competence and self-esteem) were similar among the two groups. There were no statistically significative differences between this groups concerning age, time since diagnosis or number of years on the current PW.

To better characterize the sample, the relation between the users’ age and the number of years on the current PW was also analysed. There was a negative correlation between these two variables (r=-0.602, p=0.000), indicating that the younger participants had been using their PWs for a longer period of time compared to the older ones, once again opposed to what might have been expected. This might be explained, among other reasons, by the particular characteristics of the sample and will be further discussed in the Discussion section. Neither of these two variables (age or number of years on the current PW) were correlated with the time since diagnosis (r=-0.024, p=0.900; r=-0.019; p=0.919).

Table 8 – Comparison of PAPM, P-PIADS and QUEST scores, age, number of years on the current PW and time since diagnosis, according to having or not received training oriented by professionals with the current PW

	Training with the PW	**Mean**	**SD**	***p***
PAPM	Yes (*n*=6)	2.25	0.63	**0.035**
	No (*n*=24)	1.59	0.66	
P-PIADS competence	Yes (*n*=6)	1.38	0.60	0.958
	No (*n*=24)	1.39	0.74	
P-PIADS adaptability	Yes (*n*=6)	1.50	0.84	0.543
	No (*n*=24)	1.27	0.81	
P-PIADS self-esteem	Yes (*n*=6)	1.40	0.46	0.938
	No (*n*=24)	1.38	0.61	
P-PIADS total	Yes (*n*=6)	1.41	0.50	0.863
	No (*n*=24)	1.36	0.67	
QUEST AT	Yes (*n*=6)	4.23	0.68	0.545
	No (*n*=24)	4.36	0.43	
QUEST services	Yes (*n*=6)	4.33	0.58	0.245
	No (*n*=24)	3.98	0.67	
QUEST total	Yes (*n*=6)	4.26	0.64	0.894
	No (*n*=24)	4.24	0.40	
Age (years)	Yes (*n*=6)	37.50	8.80	0.410
	No (*n*=24)	41.42	14.00	
Years on current PW	Yes (*n*=6)	7.67	5.01	0.133
	No (*n*=24)	5.00	3.45	
Time since diagnosis (years)	Yes (*n*=6)	22.50	12.39	0.446
	No (*n*=24)	26.83	12.27	

AT – assistive technology; PAPM – Activities and Participation Profile Related to Mobility; P-PIADS – Portuguese version of Psychosocial Impact of Assistive Devices Scale; PW – powered wheelchair; QUEST – Quebec User Evaluation of Satisfaction with Assistive Technology; SD – standard deviation.

Discussion

According to our findings, the user's social participation doesn't seem to be related to the psychosocial impact of the PW, similarly to what was demonstrated by Buning, Angelo and Schmeler, who found no significant relationship between the psychosocial impact of PMDs and the users' occupational performance.[14] Contrarily, a study by Martins and collaborators demonstrated a relation between higher psychosocial impact scores and a better performance in social participation, regarding different types of ATs.[6] The fact that there was no correlation between the psychosocial impact and the users' participation profile might mean that they had such severe physical limitations that, despite a positive psychosocial impact of the PWs, it wasn't enough to attenuate these limitations and improve the users' participation scores.

Furthermore, a higher satisfaction was linked to a better participation profile, which had also been previously shown by de Groot and collaborators concerning MW users.[25] Another study, contrarily, did not find any correlation between wheelchair users' satisfaction and participation.[19]

The fact that, in this study, younger individuals had a worst participation profile can be explained by the particular characteristics of the sample, which included several young PW users diagnosed with cerebral palsy and that had severe limitations since birth, which also explains why younger users had been using their PWs for a longer period of time compared to older ones, whose diseases in general had a later onset. Relative to the users' age, in Martins and collaborators' study, no relation was found between age and participation profile.[6]

It is important to take into consideration that the PAPM scores may be influenced by the fact that the participants only attribute a score to the activities they consider to be significant to them, choosing "not applicable" for the others.[22] These activities that were considered unimportant may, in fact, be the ones in which the users have more difficulties. If so, the PAPM scores may have been undercalculated and the users' participation profile considered better than it is in reality.

Moreover, our findings suggest a positive psychosocial impact of PWs in all three PIADS areas (competence, adaptability and self-esteem), as was also previously shown by Buning, Angelo and Schmeler regarding PMDs[14]. Likewise, other studies showed benefits associated with PW use, namely increased independence,[10,12] well-being[12] and social participation.[5,10] There was no evidence of a negative impact of the ATs due to stigmatization, as suggested by some studies,[15,16] since the self-esteem subscale had a similar score to the other two PIADS subscales.

There was no correlation between the psychosocial impact of the PWs and the users' age, which indicates that the ATs could be beneficial at any age, as previously shown.[6]

Considering this positive psychosocial impact of the PWs, and according to the World Health Organization's definition of QoL – "An individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment."[26] –, we can infer that the PWs increase the QoL of their users, as was also shown by previous studies.[13,27] Accordingly, Chan and Chan demonstrated a relation between wheelchair users' social participation and QoL.[19]

On a different note, the transition from a MW to a PW seems to have a greater psychosocial impact than from a previous PW to a new one. Buning, Angelo and Schmeler had previously shown that this transition increased the competence, adaptability and self-esteem of severely impaired persons, as well as their occupational performance.[14] Nevertheless, we cannot ignore the fact that, in our study, only 8 of the participants had a previous MW whereas more than twice this number (20 participants) has a prior PW, which may have had some influence on the results. This also applies to the comparison of the users' participation profiles, which suggest that there was a better performance among the first group. This is easily understandable considering that those users only required a PW recently, compared to the participants on the second group who had necessitated a transition to a PW a longer time ago due to more important limitations and, therefore, exhibit a worst participation profile.

Considering the training with the current PW, it seems to have been provided preferably to the users who had a worst participation profile, eventually as a possible attempt to improve it. There was a tendency for higher adaptability scores among users who received training, which suggests efficiency and value of the training. A study by Mountain and collaborators demonstrated that stroke patients who received formal PW training improved their PW skills to a significantly greater extent than participants who did not.[28] Nevertheless, a study by Fehr, Langbein and Skaar showed that 10% of the PW users who received training found it impossible or extremely difficult to use their PWs for activities of daily living,[17] while another study by Martins and collaborators showed no differences in terms of participation profile or psychosocial impact of diverse ATs between those who did and did not receive training.[6] Besides this, the users who benefited from the training seemed to appreciate this help that was provided, considering their higher satisfaction scores relative to the services. If a bigger investment was made to provide training to a higher number of PW users, there could possibly be a more positive impact of these ATs in the long term. Future studies are necessary to support or oppose this hypothesis.

Regarding the earlier referred aspect of the environmental barriers, previous studies showed that PW users had difficulties using their ATs[12] and that there was a negative impact on the engagement in independent activities[17] and increased difficulty in participation[5,10] by PMD users due to these barriers. Nonetheless, more studies are necessary to analyse the impact of environmental barriers on the lives of PW users and the way these barriers influence the users’ participation and QoL.

Concerning the limitations of this study, there was a limited amount of time available to complete the project, which didn’t allow us to obtain a larger sample, more representative of the target population.

The present study allows researchers and clinicians to better understand the PW users’ opinion about the impact of their ATs on their lives and, also, about the related services provided, which may help improve the quality of such services and the characteristics of the PWs, according to the users’ preferences and needs. These improvements may, in turn, lead to a more positive impact of the PWs on the users’ lives, facilitating their interaction with the surrounding environment, promoting their social participation and, consequently, improving their QoL.

Conclusions

Taking into consideration the main aims of this study, we conclude that:

1. There was an overall positive psychosocial impact of the PW in all three PIADS areas (competence, adaptability and self-esteem) and in the PIADS total score, regardless of the user's age, with a potential increase in the QoL;
2. The best participation profiles were noted among the most satisfied users (with the assistive technologies and/or the related services);
3. There was a higher psychosocial impact in terms of adaptability among the users who transitioned from a MW to a PW compared to those who already had a PW previously.

To conclude, more studies are necessary, namely to evaluate the impact of the environmental barriers on the PW users' social participation and QoL.

Acknowledgements

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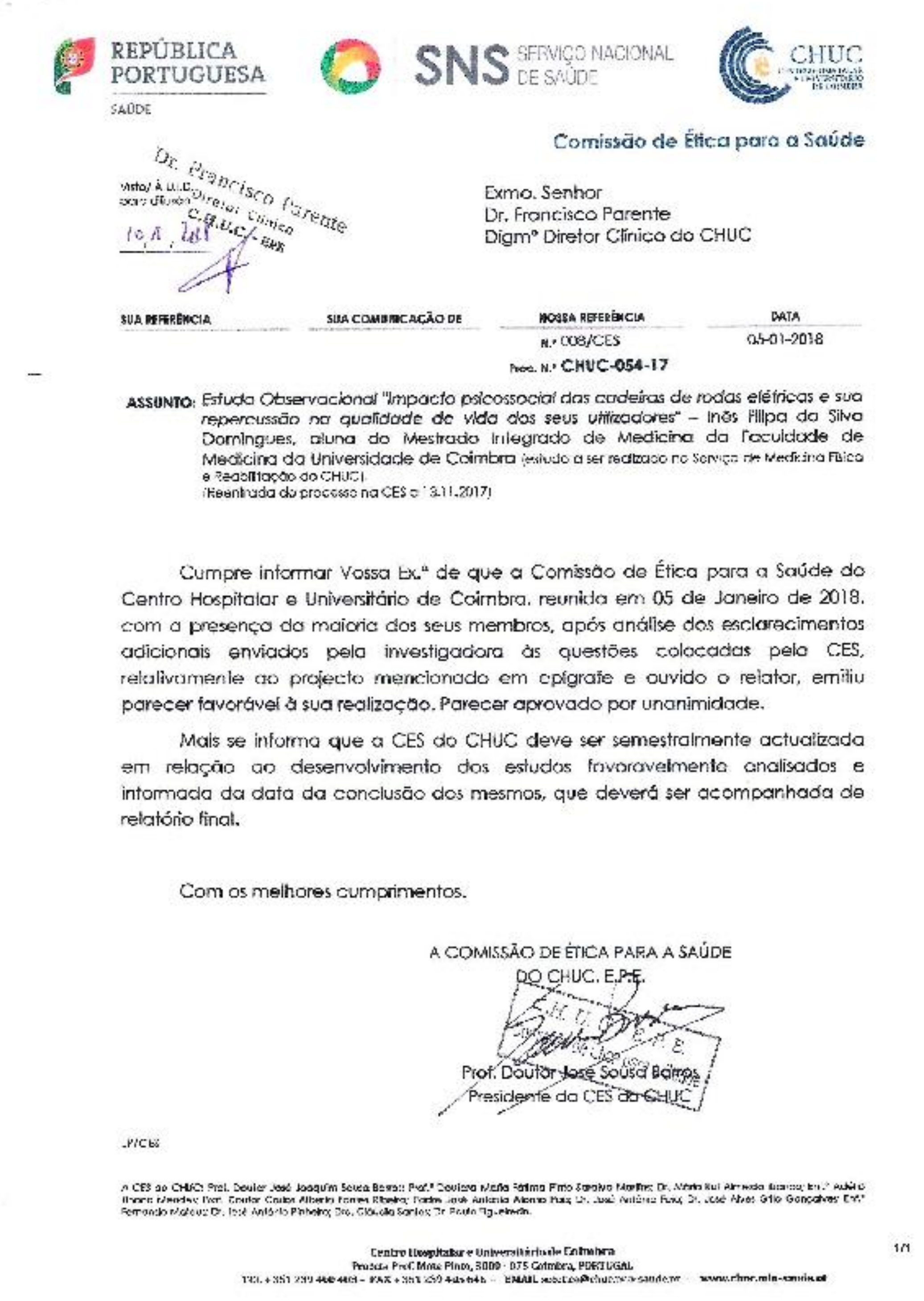
Appendix

Appendix 1 – Document of approval of the study by the ethics committee of CHUC



REPÚBLICA PORTUGUESA
SAÚDE

SNS SERVIÇO NACIONAL DE SAÚDE

CHUC

Comissão de Ética para a Saúde

Visto/ À U.I.D. para difusão
10, 1, 2018

Dr. Francisco Parente
Diretor Clínico
C.H.U.C. - EPE

Exmo. Senhor
Dr. Francisco Parente
Digmº Diretor Clínico do CHUC

SUA REFERÊNCIA	SUA COMUNICAÇÃO DE	NOSSA REFERÊNCIA	DATA
		N.º 008/CES	05-01-2018
		Proc. N.º **CHUC-054-17**	

ASSUNTO: *Estudo Observacional "Impacto psicossocial das cadeiras de rodas elétricas e sua repercussão na qualidade de vida dos seus utilizadores"* – Inês Filipa da Silva Domingues, aluna do Mestrado Integrado de Medicina da Faculdade de Medicina da Universidade de Coimbra (estudo a ser realizado no Serviço de Medicina Física e Reabilitação do CHUC).
(Reentrada do processo na CES a 13.11.2017)

Cumpre informar Vossa Ex.ª de que a Comissão de Ética para a Saúde do Centro Hospitalar e Universitário de Coimbra, reunida em 05 de Janeiro de 2018, com a presença da maioria dos seus membros, após análise dos esclarecimentos adicionais enviados pela investigadora às questões colocadas pela CES, relativamente ao projecto mencionado em epígrafe e ouvido o relator, emitiu parecer favorável à sua realização. Parecer aprovado por unanimidade.

Mais se informa que a CES do CHUC deve ser semestralmente actualizada em relação ao desenvolvimento dos estudos favoravelmente analisados e informada da data da conclusão dos mesmos, que deverá ser acompanhada de relatório final.

Com os melhores cumprimentos.

A COMISSÃO DE ÉTICA PARA A SAÚDE
DO CHUC, E.P.E.

Prof. Doutor José Sousa Barros
Presidente da CES do CHUC

LP/CES

A CES do CHUC: Prof. Doutor José Joaquim Sousa Barros; Prof.ª Doutora Maria Fátima Pinto Saraiva Martins; Dr. Mário Rui Almeida Branco; Enf.ª Adélia Branco Mendes; Prof. Doutor Carlos Alberto Fontes Ribeiro; Padre José Antunes Afonso Ruiz; Dr. José António Ruiz; Dr. José Alves Grilo Gonçalves; Enf.º Fernando Mateus; Dr. José António Pinheiro; Dra. Cláudia Santos; Dr. Paulo Figueiredo.

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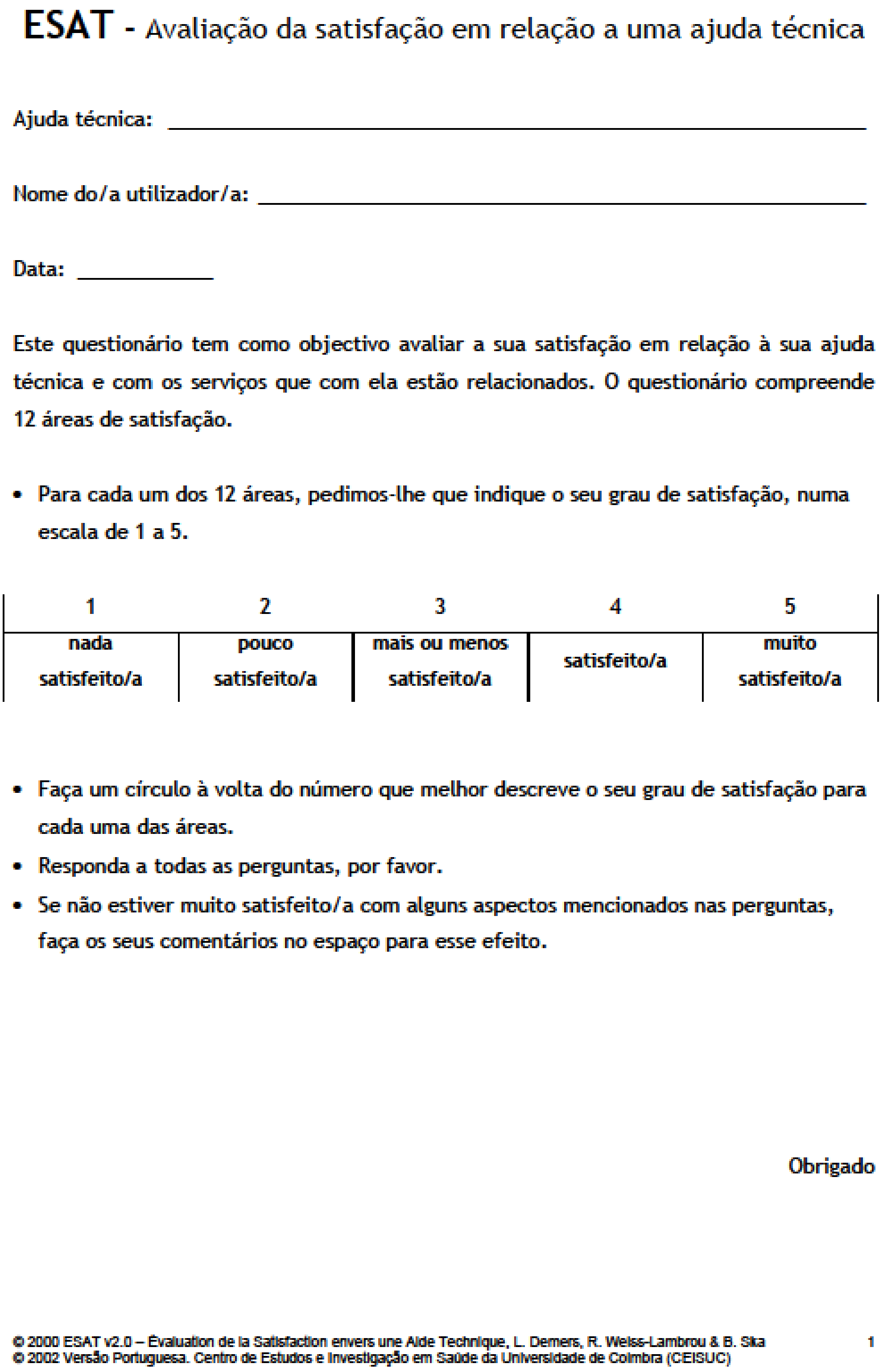
1/1

Appendix 2 – QUEST scale (page 1/3)



ESAT - Avaliação da satisfação em relação a uma ajuda técnica

Ajuda técnica: ____

Nome do/a utilizador/a: ____

Data: __________

Este questionário tem como objectivo avaliar a sua satisfação em relação à sua ajuda técnica e com os serviços que com ela estão relacionados. O questionário compreende 12 áreas de satisfação.

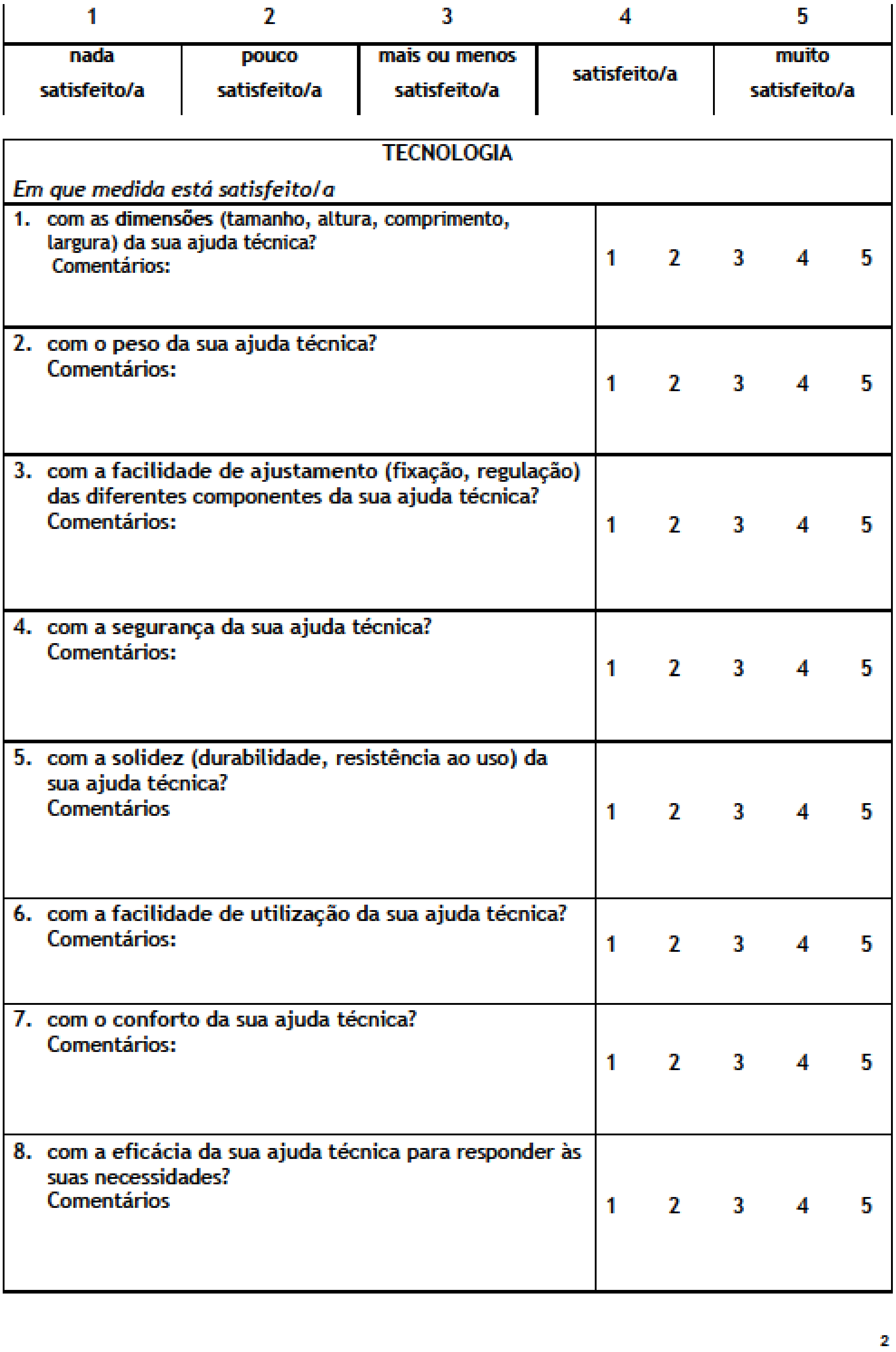
- Para cada um dos 12 áreas, pedimos-lhe que indique o seu grau de satisfação, numa escala de 1 a 5.

1	2	3	4	5
nada satisfeito/a	pouco satisfeito/a	mais ou menos satisfeito/a	satisfeito/a	muito satisfeito/a

- Faça um círculo à volta do número que melhor descreve o seu grau de satisfação para cada uma das áreas.
- Responda a todas as perguntas, por favor.
- Se não estiver muito satisfeito/a com alguns aspectos mencionados nas perguntas, faça os seus comentários no espaço para esse efeito.

Obrigado

Appendix 2 – QUEST scale (page 2/3)

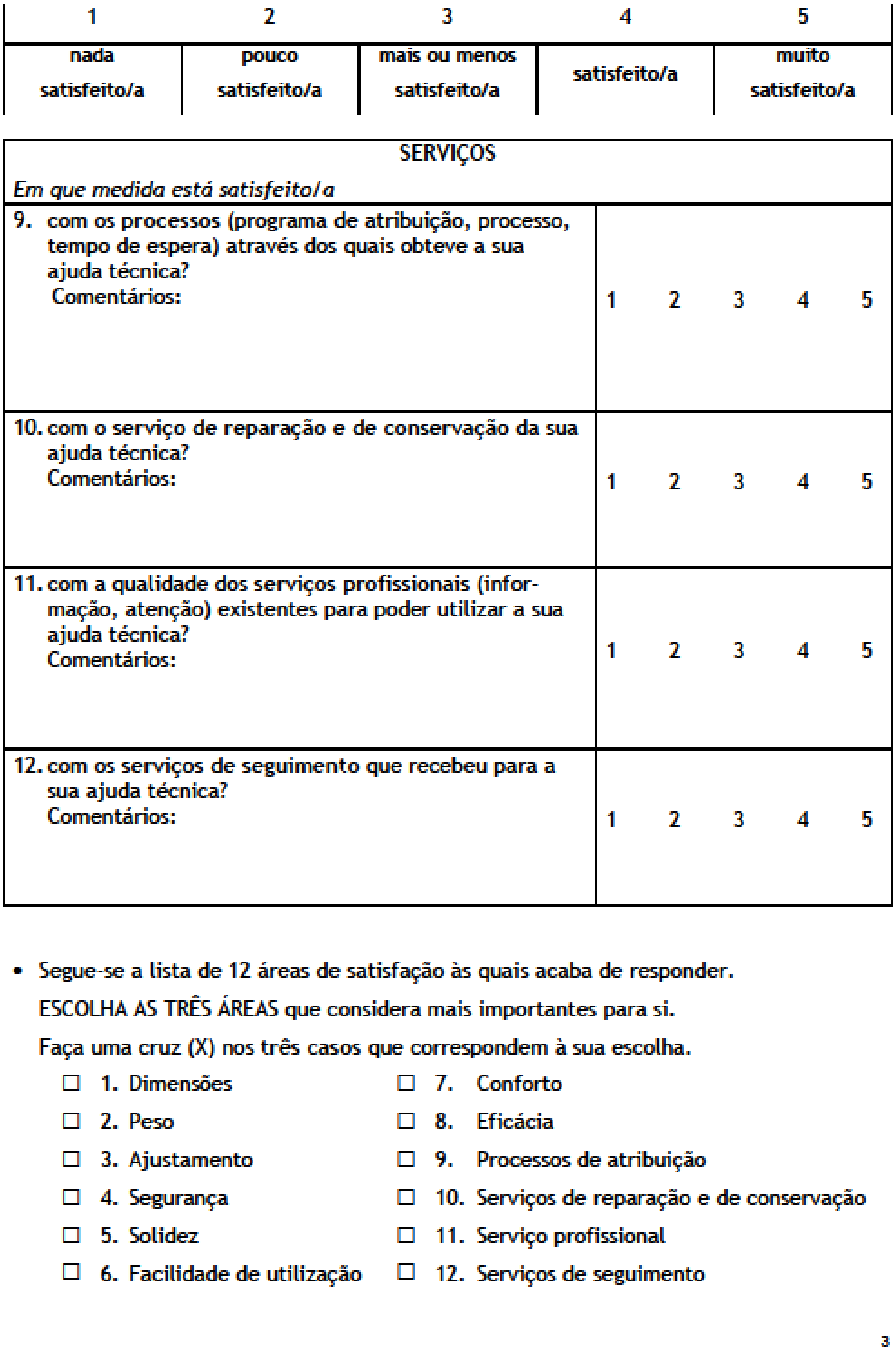


1	2	3	4	5
nada satisfeito/a	pouco satisfeito/a	mais ou menos satisfeito/a	satisfeito/a	muito satisfeito/a

TECNOLOGIA *Em que medida está satisfeito/a*					
1. com as dimensões (tamanho, altura, comprimento, largura) da sua ajuda técnica? Comentários:	1	2	3	4	5
2. com o peso da sua ajuda técnica? Comentários:	1	2	3	4	5
3. com a facilidade de ajustamento (fixação, regulação) das diferentes componentes da sua ajuda técnica? Comentários:	1	2	3	4	5
4. com a segurança da sua ajuda técnica? Comentários:	1	2	3	4	5
5. com a solidez (durabilidade, resistência ao uso) da sua ajuda técnica? Comentários	1	2	3	4	5
6. com a facilidade de utilização da sua ajuda técnica? Comentários:	1	2	3	4	5
7. com o conforto da sua ajuda técnica? Comentários:	1	2	3	4	5
8. com a eficácia da sua ajuda técnica para responder às suas necessidades? Comentários	1	2	3	4	5

2

Appendix 2 – QUEST scale (page 3/3)



1	2	3	4	5
nada satisfeito/a	pouco satisfeito/a	mais ou menos satisfeito/a	satisfeito/a	muito satisfeito/a

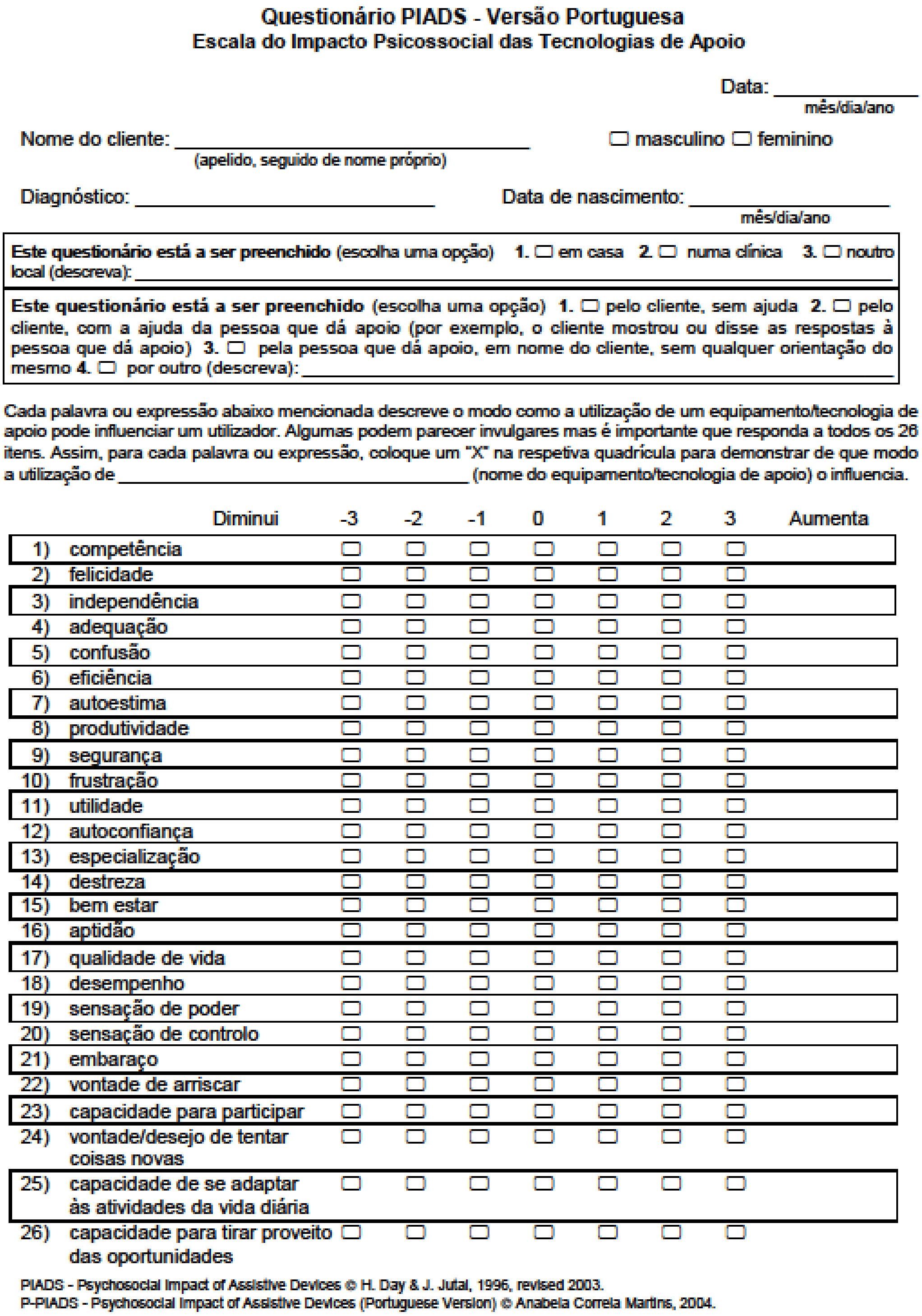
SERVIÇOS *Em que medida está satisfeito/a*	
9. com os processos (programa de atribuição, processo, tempo de espera) através dos quais obteve a sua ajuda técnica? Comentários:	1 2 3 4 5
10. com o serviço de reparação e de conservação da sua ajuda técnica? Comentários:	1 2 3 4 5
11. com a qualidade dos serviços profissionais (informação, atenção) existentes para poder utilizar a sua ajuda técnica? Comentários:	1 2 3 4 5
12. com os serviços de seguimento que recebeu para a sua ajuda técnica? Comentários:	1 2 3 4 5

- Segue-se a lista de 12 áreas de satisfação às quais acaba de responder.
  ESCOLHA AS TRÊS ÁREAS que considera mais importantes para si.
  Faça uma cruz (X) nos três casos que correspondem à sua escolha.

☐ 1. Dimensões
☐ 2. Peso
☐ 3. Ajustamento
☐ 4. Segurança
☐ 5. Solidez
☐ 6. Facilidade de utilização
☐ 7. Conforto
☐ 8. Eficácia
☐ 9. Processos de atribuição
☐ 10. Serviços de reparação e de conservação
☐ 11. Serviço profissional
☐ 12. Serviços de seguimento

3

Appendix 3 – P-PIADS scale (page 1/2)



Questionário PIADS - Versão Portuguesa

Escala do Impacto Psicossocial das Tecnologias de Apoio

Data: ____________
mês/dia/ano

Nome do cliente: ______________________________ ☐ masculino ☐ feminino
(apelido, seguido de nome próprio)

Diagnóstico: __________________________ Data de nascimento: ______________
mês/dia/ano

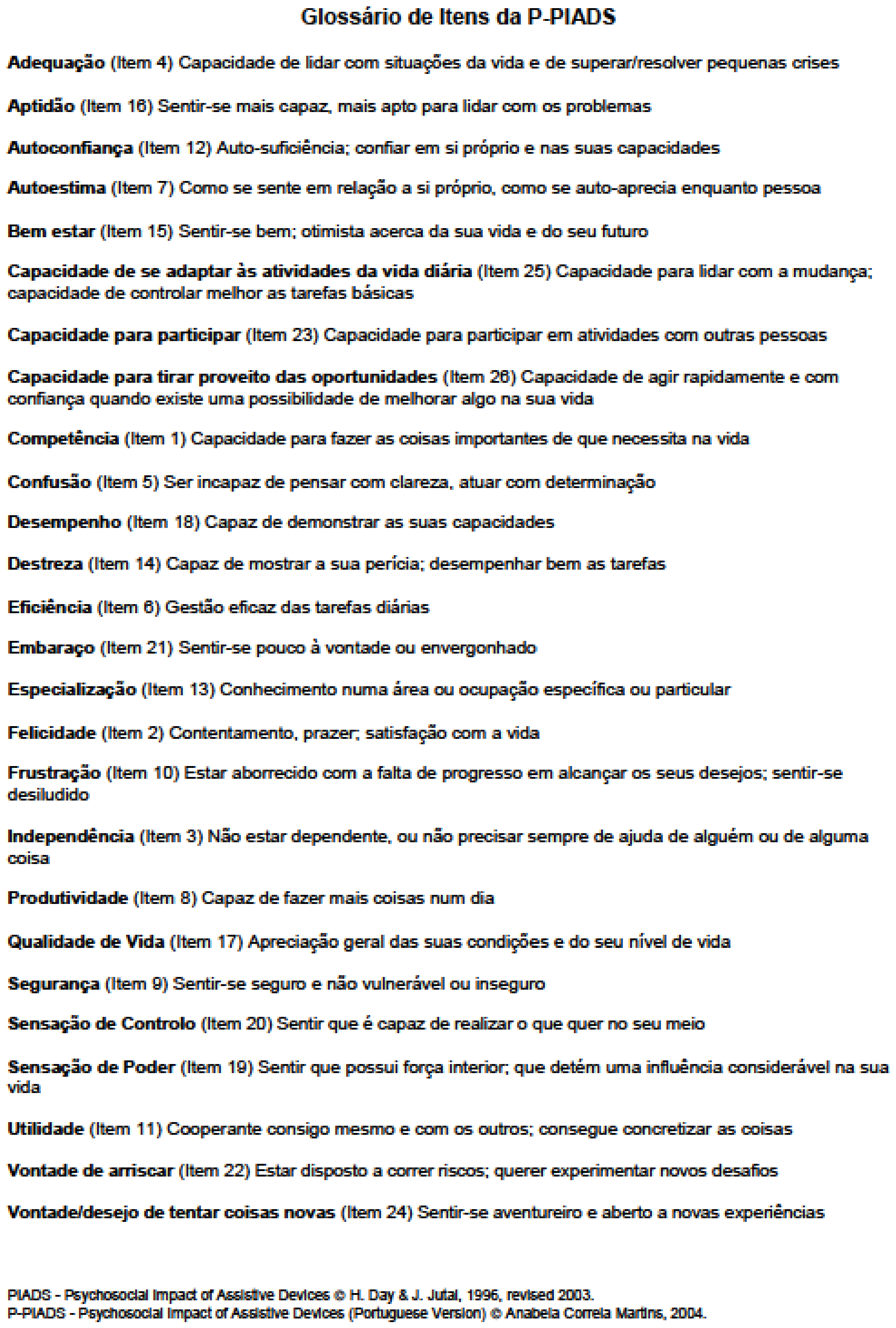
Este questionário está a ser preenchido (escolha uma opção) **1.** ☐ em casa **2.** ☐ numa clínica **3.** ☐ noutro local (descreva): ______________________________

Este questionário está a ser preenchido (escolha uma opção) **1.** ☐ pelo cliente, sem ajuda **2.** ☐ pelo cliente, com a ajuda da pessoa que dá apoio (por exemplo, o cliente mostrou ou disse as respostas à pessoa que dá apoio) **3.** ☐ pela pessoa que dá apoio, em nome do cliente, sem qualquer orientação do mesmo **4.** ☐ por outro (descreva): ______________________________

Cada palavra ou expressão abaixo mencionada descreve o modo como a utilização de um equipamento/tecnologia de apoio pode influenciar um utilizador. Algumas podem parecer invulgares mas é importante que responda a todos os 26 itens. Assim, para cada palavra ou expressão, coloque um "X" na respetiva quadrícula para demonstrar de que modo a utilização de ______________________________ (nome do equipamento/tecnologia de apoio) o influencia.

	Diminui	-3	-2	-1	0	1	2	3	Aumenta
1)	competência	☐	☐	☐	☐	☐	☐	☐	
2)	felicidade	☐	☐	☐	☐	☐	☐	☐	
3)	independência	☐	☐	☐	☐	☐	☐	☐	
4)	adequação	☐	☐	☐	☐	☐	☐	☐	
5)	confusão	☐	☐	☐	☐	☐	☐	☐	
6)	eficiência	☐	☐	☐	☐	☐	☐	☐	
7)	autoestima	☐	☐	☐	☐	☐	☐	☐	
8)	produtividade	☐	☐	☐	☐	☐	☐	☐	
9)	segurança	☐	☐	☐	☐	☐	☐	☐	
10)	frustração	☐	☐	☐	☐	☐	☐	☐	
11)	utilidade	☐	☐	☐	☐	☐	☐	☐	
12)	autoconfiança	☐	☐	☐	☐	☐	☐	☐	
13)	especialização	☐	☐	☐	☐	☐	☐	☐	
14)	destreza	☐	☐	☐	☐	☐	☐	☐	
15)	bem estar	☐	☐	☐	☐	☐	☐	☐	
16)	aptidão	☐	☐	☐	☐	☐	☐	☐	
17)	qualidade de vida	☐	☐	☐	☐	☐	☐	☐	
18)	desempenho	☐	☐	☐	☐	☐	☐	☐	
19)	sensação de poder	☐	☐	☐	☐	☐	☐	☐	
20)	sensação de controlo	☐	☐	☐	☐	☐	☐	☐	
21)	embaraço	☐	☐	☐	☐	☐	☐	☐	
22)	vontade de arriscar	☐	☐	☐	☐	☐	☐	☐	
23)	capacidade para participar	☐	☐	☐	☐	☐	☐	☐	
24)	vontade/desejo de tentar coisas novas	☐	☐	☐	☐	☐	☐	☐	
25)	capacidade de se adaptar às atividades da vida diária	☐	☐	☐	☐	☐	☐	☐	
26)	capacidade para tirar proveito das oportunidades	☐	☐	☐	☐	☐	☐	☐	

Appendix 3 – P-PIADS scale (page 2/2)



Glossário de Itens da P-PIADS

Adequação (Item 4) Capacidade de lidar com situações da vida e de superar/resolver pequenas crises

Aptidão (Item 16) Sentir-se mais capaz, mais apto para lidar com os problemas

Autoconfiança (Item 12) Auto-suficiência; confiar em si próprio e nas suas capacidades

Autoestima (Item 7) Como se sente em relação a si próprio, como se auto-aprecia enquanto pessoa

Bem estar (Item 15) Sentir-se bem; otimista acerca da sua vida e do seu futuro

Capacidade de se adaptar às atividades da vida diária (Item 25) Capacidade para lidar com a mudança; capacidade de controlar melhor as tarefas básicas

Capacidade para participar (Item 23) Capacidade para participar em atividades com outras pessoas

Capacidade para tirar proveito das oportunidades (Item 26) Capacidade de agir rapidamente e com confiança quando existe uma possibilidade de melhorar algo na sua vida

Competência (Item 1) Capacidade para fazer as coisas importantes de que necessita na vida

Confusão (Item 5) Ser incapaz de pensar com clareza, atuar com determinação

Desempenho (Item 18) Capaz de demonstrar as suas capacidades

Destreza (Item 14) Capaz de mostrar a sua perícia; desempenhar bem as tarefas

Eficiência (Item 6) Gestão eficaz das tarefas diárias

Embaraço (Item 21) Sentir-se pouco à vontade ou envergonhado

Especialização (Item 13) Conhecimento numa área ou ocupação específica ou particular

Felicidade (Item 2) Contentamento, prazer; satisfação com a vida

Frustração (Item 10) Estar aborrecido com a falta de progresso em alcançar os seus desejos; sentir-se desiludido

Independência (Item 3) Não estar dependente, ou não precisar sempre de ajuda de alguém ou de alguma coisa

Produtividade (Item 8) Capaz de fazer mais coisas num dia

Qualidade de Vida (Item 17) Apreciação geral das suas condições e do seu nível de vida

Segurança (Item 9) Sentir-se seguro e não vulnerável ou inseguro

Sensação de Controlo (Item 20) Sentir que é capaz de realizar o que quer no seu meio

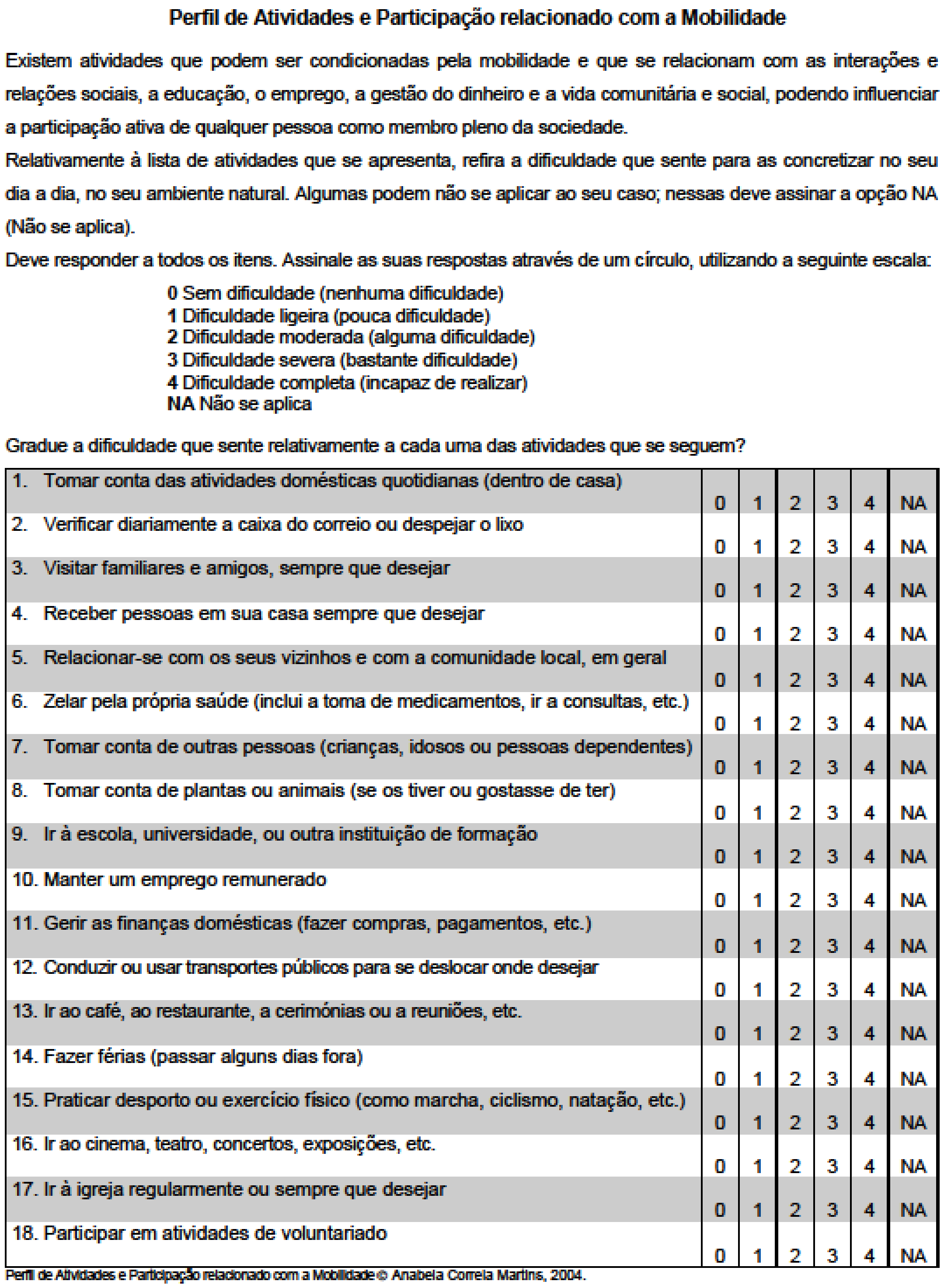
Sensação de Poder (Item 19) Sentir que possui força interior; que detém uma influência considerável na sua vida

Utilidade (Item 11) Cooperante consigo mesmo e com os outros; consegue concretizar as coisas

Vontade de arriscar (Item 22) Estar disposto a correr riscos; querer experimentar novos desafios

Vontade/desejo de tentar coisas novas (Item 24) Sentir-se aventureiro e aberto a novas experiências

Appendix 4 – PAPM scale



Perfil de Atividades e Participação relacionado com a Mobilidade

Existem atividades que podem ser condicionadas pela mobilidade e que se relacionam com as interações e relações sociais, a educação, o emprego, a gestão do dinheiro e a vida comunitária e social, podendo influenciar a participação ativa de qualquer pessoa como membro pleno da sociedade.

Relativamente à lista de atividades que se apresenta, refira a dificuldade que sente para as concretizar no seu dia a dia, no seu ambiente natural. Algumas podem não se aplicar ao seu caso; nessas deve assinar a opção NA (Não se aplica).

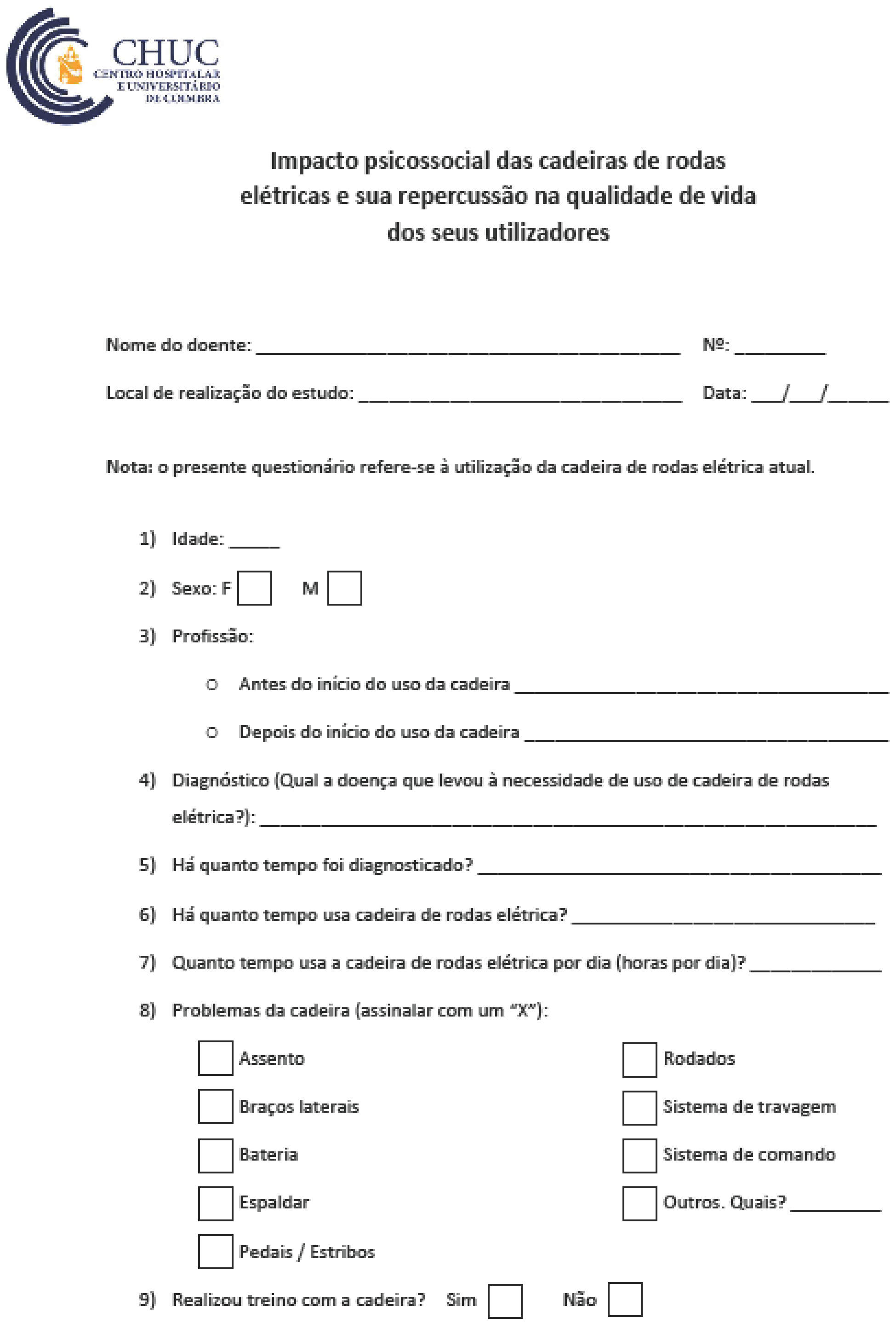
Deve responder a todos os itens. Assinale as suas respostas através de um círculo, utilizando a seguinte escala:

0 Sem dificuldade (nenhuma dificuldade)
1 Dificuldade ligeira (pouca dificuldade)
2 Dificuldade moderada (alguma dificuldade)
3 Dificuldade severa (bastante dificuldade)
4 Dificuldade completa (incapaz de realizar)
NA Não se aplica

Gradue a dificuldade que sente relativamente a cada uma das atividades que se seguem?

1. Tomar conta das atividades domésticas quotidianas (dentro de casa)	0	1	2	3	4	NA
2. Verificar diariamente a caixa do correio ou despejar o lixo	0	1	2	3	4	NA
3. Visitar familiares e amigos, sempre que desejar	0	1	2	3	4	NA
4. Receber pessoas em sua casa sempre que desejar	0	1	2	3	4	NA
5. Relacionar-se com os seus vizinhos e com a comunidade local, em geral	0	1	2	3	4	NA
6. Zelar pela própria saúde (inclui a toma de medicamentos, ir a consultas, etc.)	0	1	2	3	4	NA
7. Tomar conta de outras pessoas (crianças, idosos ou pessoas dependentes)	0	1	2	3	4	NA
8. Tomar conta de plantas ou animais (se os tiver ou gostasse de ter)	0	1	2	3	4	NA
9. Ir à escola, universidade, ou outra instituição de formação	0	1	2	3	4	NA
10. Manter um emprego remunerado	0	1	2	3	4	NA
11. Gerir as finanças domésticas (fazer compras, pagamentos, etc.)	0	1	2	3	4	NA
12. Conduzir ou usar transportes públicos para se deslocar onde desejar	0	1	2	3	4	NA
13. Ir ao café, ao restaurante, a cerimónias ou a reuniões, etc.	0	1	2	3	4	NA
14. Fazer férias (passar alguns dias fora)	0	1	2	3	4	NA
15. Praticar desporto ou exercício físico (como marcha, ciclismo, natação, etc.)	0	1	2	3	4	NA
16. Ir ao cinema, teatro, concertos, exposições, etc.	0	1	2	3	4	NA
17. Ir à igreja regularmente ou sempre que desejar	0	1	2	3	4	NA
18. Participar em atividades de voluntariado	0	1	2	3	4	NA

Appendix 5 – Questionnaire with demographic, clinical and powered wheelchair related questions.



CHUC
CENTRO HOSPITALAR
E UNIVERSITÁRIO
DE COIMBRA

Impacto psicossocial das cadeiras de rodas elétricas e sua repercussão na qualidade de vida dos seus utilizadores

Nome do doente: ______________________________ Nº: ________

Local de realização do estudo: ______________________ Data: ___/___/_____

Nota: o presente questionário refere-se à utilização da cadeira de rodas elétrica atual.

1) Idade: _____

2) Sexo: F ☐ M ☐

3) Profissão:

   ○ Antes do início do uso da cadeira ______________________________

   ○ Depois do início do uso da cadeira ______________________________

4) Diagnóstico (Qual a doença que levou à necessidade de uso de cadeira de rodas elétrica?): ______________________________

5) Há quanto tempo foi diagnosticado? ______________________________

6) Há quanto tempo usa cadeira de rodas elétrica? ______________________

7) Quanto tempo usa a cadeira de rodas elétrica por dia (horas por dia)? __________

8) Problemas da cadeira (assinalar com um "X"):

   ☐ Assento
   ☐ Braços laterais
   ☐ Bateria
   ☐ Espaldar
   ☐ Pedais / Estribos
   ☐ Rodados
   ☐ Sistema de travagem
   ☐ Sistema de comando
   ☐ Outros. Quais? ________

9) Realizou treino com a cadeira? Sim ☐ Não ☐