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The Influence of Adapted Sports on the Quality of Life of People with Disabilities

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ABSTRACT

In Portugal, the percentage of people with disabilities has risen. These people, resulting from their disability, tend to present a decrease in their quality of life (QL). The adapted sports (AS) has been referred as one of the strategies that aim to improve these people QL. Investigate if, in Portugal, the practice of AS can contribute to elevate the QL level of its practitioners. It was used the Portuguese version of WHOQOL-bref for the evaluation of the QL levels of people with disabilities, practitioners or non-practitioners, of AS. For the data gathering, an online version of this instrument was created, so it could be delivered nationwide. There were also included questions for characterizing the sample on the online survey. 116 individuals answered the survey, being its majority in the country's center (63. 79%) and male (56. 03%). The predominant age group was from 18-64 years old (90. 91%) and presented predominance in motor disabilities (43. 97%). The difference between practitioners and non-practitioners was 5. 18%, being the most frequent modality practiced, the adapted swimming (35. 29%). The practitioner's group presents only significant improvement differences in the general domain of the QL. The AS seems to promote some improvements on QL. Even having into account these results, it was in our perception that the instrument used seems not entirely sensible to the alterations on QL in this specific population.

INTRODUCTION

In Portugal, the number of people with disabilities in 2001 was 634 408 (6. 1% of the total population), being the visual impairment the most prevailing disability in the Portuguese population (1.6%), followed by the motor disability (1.5%), the "others disabilities" (1.4%), the hearing impairment (0.8%), the intellectual disability (0.7%) and at last the cerebral palsy (0.1%).[19] Although in 2009 it was estimated that about seven hundred millions of people with disabilities existed, seventy of those were in Europe and one resided in Portugal, in other words about 9% of the Portuguese population. By this data, it is demonstrated that in the last few years the percentage of people with disabilities has risen. [1]

Being a person with disability is having temporary or permanent, innate since birth or acquired developed after birth, progressive, regressive or stable issues, in the physiological functions of the organic systems in the body structures, that cause a loss, an absence, an increase, a reduction or a significant deviation. [2-3]

The types of disabilities can be classified in terms of severity and also can be part of a health condition, but don't necessarily indicate, the presence of an illness or that the subject must be considered ill. [2] In the literature it is described many types of disabilities:

- Physical-motor disability – Physical disability: Caused by an apparent physical disability, usually acquired in traumatic conditions and observed by the lack or a member deformation (example: amputation). Failures in motor functions can be also caused; Motor disability: Associated to a failure in the function, usually of the members, either superior or lower (example: palsy) and normally of innate origin. Consequently, physical disabilities can also be acquired. [4]

- Intellectual/ mental disability: In cases where to exist an intellectual function below the average and limitations in at least two areas of the adaptive behavior -the way that a person adapts its response to a specific situation. [5]

- Sensorial disability – Visual disability: When there exist a loss or a serious reduction in the visual capacity in both eyes and when it can't be improved or corrected with the use of lenses or by clinical or surgical treatment; Hearing impairment: When an individual presents a decrease of the hearing capacity of 27 Db to more than 91 Db. [6-8]

Individuals consequently to its disability can develop incapacity, which means, they can present limitations in the realization of its daily activities, restrictions in its social participation, reduction in its level of quality of life and yet, sometimes, although less frequently comparing with what happened a few years ago, are discriminated by the society.[2, 9-10]

Although that, nowadays, the attempt to improve and increase the adjustment of life conditions is increasingly observed, for that, the people with disabilities have the same equality level, in terms of opportunities, of the remaining population. [9]

For this goal, one of the identified strategies is the adapted sports practice. This practice had its begin in 1948, with the realization of the first "Stoke Mandeville Games" and became more and more acknowledged and demonstrated a major impact each time, since 1960 with the realization of the "Paralympic Games", that now have a large diversity of sporty modalities. [11-12]

The Adapted Sports have been considered, in a global scale, as intervenient in four specific dimensions, the competitive, the recreational, the therapeutic and the educational, as a phenomenon that allows to set interpersonal relations so important for the individual as for the society, showing benefits either in prevention or treatment of clinical conditions as also in terms of integration, inclusion and socialization. [13-14] The increase of the recognition of the benefits of this practice, the number of athletes practicing, either in Portugal or in the world and the abandonment of the amateur practice level to perform at a professional level it's caused by the technological development, the acceptation and the recognition by the population of the adapted sports practice, the alteration of the concept of disability, amongst others. [13, 15-16]

Therefore, adapted sports are something that seems complement the work goals of Physiotherapists, which in turn, by its evaluation and intervention, act in the health promotion and individual or collective well-being, in the prevention of diseases and also in the habilitation, treatment or rehabilitation of patients with physical, mental or other level issues, in order that the individual get the maximum possible level of functionality and quality of life. [17]

So, in this study it was selected assess one of the benefits of the adapted sport practice, described in the literature, the improvement of the quality of life, since the quality of life

represents the perception that the individual have about its position in life, depending on its values, goals, concerns, expectations and standards and within the context that it is inserted. [18]

The main goal of this study is to investigate if the adapted sport may or may not serve as a promoting agent of the level of the quality of life, in the several domains – physical, psychological, environmental and social and in the general facet, of the practitioners that are resident in Portugal. Yet, as specific goals, it is intended to understand if the mean and the order of the quality of life perception of the practitioners of adapted sports of the sample is concordant with what is described in literature, if it exists a relationship between the gender, the age, the type of disability and the value of quality of life obtained in the questionnaire and yet if it exists a relationship between the type of disability and the sporty modality performed.

METHODOLOGY

Type of study: This investigation is a collection of data with an exploratory design.

Selection of the sample: The target population of this study comprehend all the individuals with disabilities, in a physical-motor, sensorial or intellectual level, that practice or not any adapted sport modality.

For the selection of the sample it was reported the use of inclusion and exclusion criteria being only allowed in the sample individuals with physical-motor, sensorial or mental disability, of both genders, different ages and resident in Portugal, not being included in the same sample, all the individuals that don't reside in Portugal or that didn't have the possibility to accomplish the questionnaire by auto filling or by fill with the assistance of their caregivers.

Data collection: For the data collection, it was used a questionnaire that contained the WHOQOL-bref instrument and also a sample characterization questionnaire, realized exclusively for this study, with questions related to the "personal information", the "current health conditions" and the "habits, hobbies and leisure".

The author of the development of the validation of the questionnaire used (WHOQOL-bref), for the Portuguese language, Professor Dr. Maria Cristina Sousa Canavarro, belonging to the Portuguese center for the evaluation of the quality of life (*Centro Português para a Avaliação da Qualidade de Vida),* allowed the use of the same in the realization of our study having also sent all the necessary documentation for its application.

The WHOQOL-bref instrument is constituted by twenty six items, twenty four which are related with the four domains of the quality of life (physical, psychological, social and environmental) and two that are related with the perception that the individual has about its general level of quality of life. This measure instrument presents an elevated internal consistency of Cronbach, as in the set of the domains (α= 0. 77; varying between: environment - α= 0. 71< others dimensions < physical - α= 0. 84), as in the twenty six questions (α= 0. 91) and correlations between the test and retest elevated and significant (varying between: psychological – r= 0. 69< others dimensions < physical – r= 0. 81). [20]

The questionnaire was placed online in February 2015, being contacted diverse associations/ institutions that are related, in some way, with people with disability, in order to be shared with its associates, to obtain a randomized and representative sample of the target population.

In the treatment of the data, it was used descriptive statistics and it was realized the 'Student's 't' test with the recourse of the $p \leq 0.05$ value or the Mann- Whitney U test, according to the number of individuals by group to be evaluated, to assess if the differences found were statistically significant. The programs that have been used for this analysis were the *Excel* (version 2013) and the *Statistical Package for the Social Sciences* (SPSS - version 19.0).

All the individuals involved in the research were informed about the goals of the same study having been assured to them the confidentiality of its data.

RESULTS

The attained answers to the questionnaire were collected between February 6th and March 17th of 2015.

The obtained results are presented below and in a way to facilitate its comprehension; it opted for presenting the following logical sequence of organization: (1) Characteristics of the sample; (2) Practice of adapted sports; (3) Quality of life.

Note: All the obtained and used values are rounded to the hundredths/ the second decimal place.

Characteristics of the sample

The sample was constituted by 116 people, 114 of the Portuguese nationality and 1 of the Angolan nationality and being 51 of the individuals of the female gender (43.97%) and 65 of

the male gender (56.03%). The average age of the respondents is of 36.68 years, varying between the 3 and the 68 years old and being the majority of the sample in the age group of 18 to 64 years old (in the group age of 0-17 years - n=9; in the group age of 18-64 years n=102; and in the group age of + than 65 years – n=4). There exists a missing value in the nationality and another one in the age.

The predominant region of the respondents is the center with 63. 79%, followed by the north with 19.83%, by the south with 14.66% and by the islands with only 1.72%. The majority of the sample lives in an apartment (53.45%) but one big percentage lives in a villa (single store/one store high – 18.19% or higher than a store – 15.52%) and the remaining in residential homes (3.45%), in dwelling (2.59%), in farm (1.72%), in rented room/outhouse (1.72%), in private institution of social solidarity (0.86%) and yet in convent (0.86%).

Relatively to the civil status, the majority of the sample is single (66.38%), being the rest married (17.24%), divorced (6.90%), in union facts (6.03%) and widow (3.45%). But in contrast, only one small portion lives alone (9.48%) since the others live with someone else (50.86% - with parents or other familiars; 12.07% – with husband/wife; 11.21% - with husband/wife and son(s)/ daughter(s); 6.90% - with son(s)/ daughter(s); 3.45% - with other people with disabilities; 2.59% - with friends; and 0.86% - with and informal caretaker). It's also to mention that 35 of the respondents have children (30. 17%), 56. 60% is of age and 43.40% under age.

In terms of level of education it was verified that 10.35% did not know how to read or write, that 1.72% knows how to read and/or write, that 25. 00 % frequented or frequents basic education, that 34. 58% frequents or finished high school and that 28.45% has already been or is in higher education. It was also verified that the majority of the individuals have an active professional life, 68.10% (being that, 64 of the individuals are working and studying) and that the remaining are retired (11.21% - 13 individuals), or unemployed (19.83% - 23 persons). There exists one missing value on the professions.

Of the respondents, a significant portion presents motor disability (43.97% - 51 individuals) but, even though not with the same amount, answered to the questionnaire, individuals with all the different types of disabilities which have been described in the introduction (mental disability – 18.97%; physical disability – 11.21%; visual impairment – 6.90%; and hearing impairment– 5.17%) and further people that presents one association of the diverse

disabilities (physical-motor disability – 5.17%; multiple disabilities – 5.17%; and sensorial impairment – 3.45%). Of these disabilities a big portion is of innate origin (45.48%) but in the majority it was developed throughout life, in the different age groups (in "baby", since the first month after birth until the two years old – 8.40%; in child, since the three until the eleven years old – 7.56%; in adolescence, from twelve to seventeen years old – 10.08%; and in adulthood, from eighteen to sixty five years old – 27.73%). As for the causes of the disabilities of the individuals of the sample there is the innate (48.28%), the traumatic (26.72%), the caused by a disease (16.38% - stroke, diabetes, meningitis, myxoma, osteodystrophy, poliomyelitis, Alström Syndrome, rubella, sepsis, among others), the unknown (6.90%) and yet the caused by a medical action (2.59% - surgery and vaccination).

At last, it is also to refer that, of the 116 people with disabilities, 71 were not in treatment (61.21%), being only 45 individuals of the sample monitored by health professionals (38.79%, namely: 73.33% - by medic; 37.78% - by physiotherapist; 22.22% - by psychologist; 15.56% - by psychomotor therapists; 4.44% - by the hearing rehabilitation; 4.44% - by speech therapist; 2.22% - by acupuncture).

Practice of adapted sports

For the analysis of this subject the individuals were divided into two groups, the "Group 1: Practitioners of adapted sports" and the "Group 2: Non- practitioners of adapted sports" and it was concluded that, 55 of the individuals were practitioners of adapted sports (47.41%) and that 61 don't practice any modality of adapted sports (52.59%). It should be noted that 15 of the respondents present some contraindication to the practice of adapted sports but that 5 of them, realize at least one sporty modality.

About the *Group 1*, 26 of the individuals are of the female gender which represents 50.98% of the total of the individuals of the female gender present in this sample and 29 are of the male gender which is 44.62% of the total of the individuals of the male gender present in this same sample. The average of the ages of the practitioners is of 36.72 years, varying between the 12 and the 67 years and being a significant percentage of the individuals of this group in the 18-65 age gap (90. 91%). The majority of the individuals of this group is single (67.72%), presents or is attending high degrees of education (58. 18% - university education: 29. 09% and secondary education: 29. 09%) and have an active professional life or is currently retired (78. 18%). A missing value exists in the age and profession. These data is in more detail in

Now about the *Group 2*, 25 of the individuals are of the feminine gender which represents 49.02% of the total of the individuals of the feminine gender present in this sample and 36 are of the male gender which is 55.38% of the total of the individuals of the male gender present in this same sample. The average of the ages of the non- practitioners is of 36.68 years, varying between the 3 and the 68 years and being a significant percentage of the individuals of this group in the 18-65 age gap (85.25%). Also in this group, the majority of the individuals of this group is single (65. 55%), presents or is attending high degrees of education (67. 26% - university education: 29. 51% and secondary education: 37. 75%) and have an active professional life or is currently retired (80.33%). These data is also in more detail in *Table 1*.

Considering the number of respondents by disability, it is understood that in this sample the people with multiple disability have a more significant practice of sport (60.00%), followed by the people with mental disability (54.55%), motor disability (52.94%), physical-motor disability (50. 00%), physical disability (46. 15%), hearing impairment (33.33%), visual impairment (25.00%)and in last the people with sensorial disability that in its entirety don't report the practice of adapted sport (0.00%).

The individuals of the group 1, the practitioners of adapted sports, in its majority (90. 91%) report a practice of more than a year (varying between 1 and 31 years of practice; being the average of practice of about 6 years and 3 months) yet, 2 relate a practice of only months (6 and 7 months) and 3 of the respondents do not explain the time/ the begin of its practice. Relatively to the practice frequency of the modality realized, the bigger part realize weekly (85.46%: 50.91% - 2-1 times a week; 30.91% - 5-3 times a week; and 3.64% - more than 5 times a week), whereas the remaining realize monthly (3.64% - 3-1 times a month), every six months (5-1 times a month every six months), seasonally (1.82% - regularly in summer) and occasionally (1.82% - at least one time a year or in activities / events that they participated). A missing value exists in the start date and in the frequency of the practice.

In respect of the reasons of the practice of adapted sport, many were the motives related by the group of the practitioners of the sample for its practice. The majority of the practitioners refer the increase of the well-being (89.09%) was one cause of its practice, more than the half of the group 1 relate practice by the improvement of the muscle strength (65.45%) and of the cardiorespiratory condition/ effort tolerance (61.82%), by the increase of the level of the quality of life (58.18%) and by the promotion of the conviviality/ communication (54.55%), a

minor percentage by the improvement of the flexibility (45.45%), of the balance/ coordination (43. 64%), of the time occupation (43.64%), of the integration in society (41.82%) and of the increase of the capacity to realize the daily activities (32.73%), also a less significant part practice by the improvement of the space orientation (14.55%), the increase of the muscle mass (1.82%), by pleasure (1.82%) and by the competition (1.82%) and one of the individuals don't reported which is(are) the reason(s) for its practice.

At last, it is also important to refer that, the individuals of the group 1 practice different adapted sporty modalities since some individuals of this same group realized more than only one modality which means that, in this sample, it exist 55 practitioners of adapted sport but 68 practices realized (this distribution is in more detail in *Figure 1: The distribution of the practitioners of adapted sport by sporty modalities*). It was found that the people who practiced adapted sport and with mental and multiple disabilities mostly practiced adapted swimming (with mental disability, 91.67% - although also practiced adapted gymnastics, gymnasium and hippotherapy; with multiple disability, 100.00%) whereas that the individuals with the others types of disabilities are distributed by a bigger variety of sporty modalities.

Quality of life

The average of the quality of life perception in this sample is of 64.32%, varying between the psychological and the general domain (psychological – 58.05% -, physical – 61.70% -, environmental – 64.14% -, social- 65.37% - and general domain – 71.98%) –in a 0 to 100% scale, being that as closer the value is to 100% as better is the quality of life perception of the individual.

When the individuals are subdivided by genders it's verified that the respondents of the male gender demonstrate an average of quality of life perception higher than the feminine gender (total average of the domains: male – 64. 55% -, feminine – 63. 87%). Either in the physical, psychological, social and environmental domain, it is the male gender that perceive its levels of quality of life as more favorable. In the general domain, it´s the opposite that happens, it´s the feminine gender that presents a more elevated level of quality of life. These data is in more detail in *Table 2: The averages percentagens of the levels of the quality of life in this sample by genders, age groups, types of disabilities and by the practice of adapted sport and the respectivo diferentes between the groups*.

Furthermore that, when the sample is subdivided into age groups it's verified that the individuals of the age group with the ages between the 18 and the 64 years, perceive as more elevated its middle level of the quality of life and the different results of the domains, varying between the physical domain with 66.07% and the general domain with 85.00% (the average of the domains is: 73.86%). The individuals of the age group of 0-17 years old only present a superior average of the quality of life than the individuals of the age group of + than 65 years, varying between the 55.09% in the psychological domain and the 74.44% in the general domain (the average of the domains is 62.44%). Ultimately, the individuals of the age group of + than 65 years are the ones that perceive its own level of quality of life as the lowest, varying between the psychological domain with 51.04% and the general level of 77.50% (the average of the domains is 61.63%) - These data is also in more detail in *Table 2.*

It is also demonstrated, when the sample was subdivided by types of disabilities that the higher average of quality of life perception is in the individuals with multiple disabilities and the lowest in the individuals with sensorial disability (Sensorial disability – 53.15%; Hearing disability – 57.95%; Physical disability – 61.88%; Physical-motor disability – 62.63%; Motor disability – 64.77%; Visual disability – 66.01%; Mental disability – 66.70%; Multiple disability – 68.88%). As in the psychological domain as in the social and environmental domain, the higher average of the quality of life perception is in the individuals with multiple disabilities. Already in respect to the physical and the general domain, the higher average of the quality of life perception is in the individuals with mental disability. And finally, the lower average of the quality of life perception of the domain: Physical, belongs to the individuals with physical –motor disabilities; Psychological and general, belong to the individuals with hearing disabilities; Social and environmental, belongs to the individuals with sensorial disabilities - These data is also in more detail in *Table 2.*

It is still verified, when the "Group 1: Practitioners of the adapted sports" and the "Group 2: Non-practitioners of adapted sports" are once again compared that in the group 1, the domain that is perceive as the one that present a higher level of quality of life is the general, followed by the social, the environmental, the physical and the psychological already in the group 2, the group that perceives as the higher level of quality of life is also the general domain but the order isn't identical, being followed by the environmental, the social, the physical and lastly the psychological. It is also checked, when analyzed the two groups that the higher level of quality of life perception is present in the Group 1 with 65.75% (the Group 2 presents an average of 62.90%) but despite this, it is observed that same difference it isn't verifiable in

all of the domains. In the physical, social, environmental and general domain, the practitioners of adapted sports in fact demonstrated a higher perception in its level of quality of life but in the psychological level, there are the non-practitioners of adapted sports that perceive as higher its level of quality of life. There are only found significant differences with a positive F in the general quality of life domain - These data is also in more detail in *Table 3.* And in last, it was evaluated the possibility of the existence of significant differences in the domains of the quality of life between the genders, ages groups and types of disabilities comparing the practitioners and the non-practitioners of adapted sports and it was concluded that, in this sample, it only exist significant differences with $p \leq 0.05$ in the general domain of the quality of life of the individuals of the age group of 18-64 years old and with motor disability. It is to highlight that it was used the *'Students' test* when the samples were superiors to 30 and the *Mann- Whitney U test* when those were inferiors and that it was not realized statistical treatment to the age group of +65 years, because of the reduced number of individuals and to the sensorial disability by the fact of the totality of the individuals with this disability in this sample aren't practitioners of adapted sports. These data is in more detail in

DISCUSSION

This discussion will also be presented in a way to facilitate your understanding, and for that reason, it will be subdivided into three parts: (1) Sample Vs Portuguese population; (2) Relationship with the adapted sport; (3) Relationship with the quality of life.

Sample Vs. Portuguese Population

Beginning with the analysis of the sociodemographic data, in 2011, there was in Portugal, 3.74% of foreign nationals, the age group with a bigger percentage was from 30 to 69 years old (54.00% - the rate of population in active age was 47.56%), the bigger percentage of residents was in the northern region (followed by the center, south and islands), about 47.00% were married (with a significant percentage of singles – 40.00% - a small percentage of widows – 7.00% - and divorcees – 6.00%), the illiteracy rate was 5.20%, 49.60% had the first grade skills, 31.69% high school and 12.00% had university skills, the employment rate was 48.50% and unemployment was 13.18% (13.30% in December of 2014 with higher impact amongst young people). [21-22] In addiction, and like it was mentioned in the introduction, it is known that in 2001 in Portugal there was 6.10% (9.00% in 2009) of people with disability, not being the distribution by disability equitable (predominance order - visual disability, motor disability, "others disabilities", audition disability, mental disability and

cerebral palsy) and that in 2012 the male gender was considerate predominant in almost all types of disabilities (except visual disability). [1, 19]

Comparing this data with the sample it is concluded that:

- In the sample, there is one individual of foreign nationality (0.86%) which means that is an inferior percentage of what was registered in Portugal in 2011.

- The average age of the surveyed is 36.68 years, which is expected since it corresponds to the groupage more present in Portugal and to the active age.

- The majority of the individuals in the sample resides in the center region (followed by north, south and the islands), which is not totally expected since there are more habitants in the north, but this can be explained by a more facilitated access to the questionnaire.

- In terms of literacy levels it's verifiable that in the sample there is a bigger percentage of individuals that can't read or write and who attended or attends the high school and university, that exists a lesser percentage of individuals who attended or attends first grade and that some individuals can read and/or write, in comparison with the data of 2011.

- From the surveyed 55.17% reports having a professional active life and 19.83% being unemployed that demonstrates that in the sample that exists a bigger percentage either of people studying and working as unemployed.

- The distribution of individuals by disability type in the sample is also non-equitable but in this case, the order of predominance is not identical (predominance order - motor disability, mental disability, physical disability, visual impairment, hearing impairment, physical-motor disability, multiple disabilities and sensorial impairment).

- And at last, in the sample, there is a bigger percentage of individuals of the male gender, which is in accordance with the literature since the male gender is predominant in almost all of disabilities types with the exception of the visual impairment, like it was mentioned before. It should be mentioned that in this sample there are only 6. 90% of individuals that present visual impairment.

Relationship with the adapted sport

In the approach to the subject matter of adapted sport, it is described in the literature, that exists a percentage of practitioners of the male superior to the female gender, that the practice is proportionally inverse to age, that the family responsibilities in the aggregate are translated into a lesser practice frequency and that as the higher academic level is, the bigger is the percentage of participation in sports. [16]

In the sample, despite the number of male practitioners being superior, there are the individuals of the female gender who demonstrate more participation in sports, since more than half of these are practitioners (50.98% of practitioners) whereas while the individuals of the male gender have a more significant percentage of non-practitioners (55.38% of non-practitioners) which means that the results obtained in this sample are not in accordance with the expected. It is also verified that the bigger number of practitioners are from group age of 18-65 years, followed by the 0-17 years and at last by the + than 65 years, which means that the proportional inverse relation age is not observable. About the fact of the family responsibilities having an influence in a less participation in the practice of sports, by the results obtained in this sample it is demonstrated a linear connection with the mentioned, since the group of practitioners in comparison with the group of non-practitioners, presents a bigger percentage of individuals living alone and a lesser percentage of who lives with children (nevertheless there exists a bigger percentage of practitioners with children). And in last, the group of non-practitioners demonstrates higher levels of literacy, presenting a higher percentage of people with university and high school levels, which also does not correspond to what is described because it is reported that the higher the literacy level is the higher is the participation in sports, but on the other side, the group of non-practitioners presents a higher percentage of people that can't read or write, therefore that it is not perceptible a linear relation between the variable literacy and the participation or not, in sports.

In the study realized by Zuchetto A. & Castro R. (2002 – Santa Maria) with the objective of analyzing the contribution of physical activities in the quality of life of people with disability, it is described that the minimum of sports practice recommended is three times a week, in order for the occurrence of physiological adaptations, which means long-lasting adjustments and that capacitate the organism to respond in a more efficient way in the organic function. In that same study there is also reported that when there is a practice of sport activity of at least five times a week and it is intended to diminish the risk of injuries, it must be performed an

interspersed activity and not just a single one activity (like basketball and swimming since the second is a sport realized in water being pleasurable, relaxing and with low impact).[23]

In the collected sample it can be observed that a significant part (30.91%) practices sports from 5-3 times a week and that just a small percentage (3.64%) practices more than 5 times a week. This data demonstrates that the majority of the sample does not practice an activity that allows the occurrence of physiological adaptations, which might have an influence on the results obtained in the several domains of quality of life, which means that it might promote that the differences between groups (practitioners and not practitioners) might not be that significant – the differences between these two groups will be treated in more depth in the follow in: *Relationship with the quality of life.* Also in the sample collected, it is not verified what is advisable by the literature, since that the individuals that practiced more than 5 times a week of adapted sports do not present any practice of interspersed activity (despite about 50% of them practiced only swimming).

Relationship with the quality of life

In last it will be approached the "Relationship with the quality of life". Either in Portugal as in the world, each time more are made studies that investigate the population with disability and adapted sports (the history / evolution of adapted sports; the incidence of injuries in the practice; the agility, the speed, the strength of respiratory muscles, the performance, the proprioception, the posture and the physical skill of the practitioners; amongst others subjects) and furthermore that there also exist studies about the subject matter approached by this article "The influence of adapted sports in the quality of life of people with disability" but, by the research that was made, there were found only few articles based on the Portuguese population (the higher number of articles found made reference to the Brazilian population), being the ones that were found in a huge part realized with a reduced sample, with only data of people with physical-motor disability and sometimes with not concordant results (many articles report that the practice of adapted sports provokes significant changes in the different domains of quality of life of people with disability while on the contrary, other studies report that those differences are only significant in certain domains of the quality of life).

The instrument of measure selected in this study to assess the quality of life was the WHOQOL-bref which has also been used in other studies with similar aims. [24-26] Despite that

there was also found studies with similar objectives that used questionnaires elaborated by investigators[8,13,23,27] or that used the Brazilian version of SF-26[28]. So, comparing these two instruments that are translated and validated to the Portuguese population, the SF-36 and the WHOQOL-bref it's concluded that both approach the same domains, present good psychometric characteristics, are composed by few questions and that these are elaborated in a simple way, but in fact, the WHOQOL-bref demonstrates present better psychometric characteristics. The WHOQOL-bref presents an internal consistency of $\alpha = 0.77$ in the domains (varying between $\alpha = 0.71$ and $\alpha = 0.84$) and of $\alpha = 0.91$ in the total of the 26 questions, correlations between the test and the re-test elevated and significant (varying between $r = 0.69$ and $r = 0.81$) and still the SF-36 presents an internal consistency less elevated (varying between $\alpha = 0.60$ and $\alpha = 0.87$) and also correlations more weak (varying between $-r = 0.45$ -0.79).[20, 29]

The main goal of this study like it was mentioned before, is to investigate if the adapted sports can or can't serve as a promoting agent of the level of quality of life, from the practitioners resident in Portugal and by the analysis of the obtained results it was verified that the practitioners of adapted sports in the sample, present a better level of quality of live in the physical, social, environmental and general domains and that the non- practitioners perceive a better level of quality of life in the psychological domain, whereas that there are only significant differences $p \leq 0.05$ in the general facet of the quality of life with positive F. So, by the obtained results and by the statistical analysis, it can be concluded that in this sample, the practice of adapted sports demonstrates to have an influence on the perception that these individuals have of their life, relatively to the support that they receive from other people, considering that it is closer to what they need and to their own level of quality of life, reporting it as higher. It is important to mention one important data, when verifiable the relation between genders, group ages and types of disabilities, it's concluded that the individuals of the group age of 18-64 and the individuals with motor disability, were the only groups that presented significant differences in the general domain of the quality of life between the group of practitioners and non- practitioners, which means that by this data it's demonstrated that these factors may have influenced in the average general by domains since the collected sample is composed in its majority by individuals of this group age and with this type of disability.

Now, in comparison with previous studies that also compared the levels of quality of life between practitioners and non- practitioners of adapted sports it's verified that the obtained results in the literature are not totally in agreeance with each other's and with ours:

- Martins D. & Rabelo R., (2008 – João Monlevade, Brazil) realized a study with the goal of investigating if the physical activity is an effective strategy to promote the maintenance or the improvement of the quality of life of people with disability. They applied the questionnaire SF-36 to a sample of 20 people with physical disability, divided into two groups, a control group (n=6) and an experimental group (n=14). The experimental group was submitted to a program of swimming with the duration of 24 weeks (twice a week and 50 minutes a class), in a heated and covered swimming pool. The obtained results showed a significant improvement between the pre-test and the post-test in some of the domains of quality of life – functional capacity, limitation, health, vitality, social and emotional aspects (with $p \leq 0,05$) –, being that in the remaining domains it was not found significant improvements (pain and mental health).[28]

- Noce F., Simim M. & Mello M. (2009 - Belo Horizonte, Brazil), also realized a study with a similar aim to the previously, verify the effect of the practice of physical activity in the perception of the level of the quality of life of people with physical disability. They applied a questionnaire of demographic data and the WHOQOL-bref questionnaire (validated for Brazil) – performing three harvests of results in the course of 12 weeks (every 30 days) –, to a sample of 20 individuals with physical disability, 10 which are practitioners of wheelchair basketball and 10 which are sedentary, in different places and days. By the obtained results it was concluded that the group of practitioners of sports demonstrates significant and superior values than the non- practitioners, in the different domains that were accessed – physical, psychological, social and environmental – without significant differences between the harvests collected. [25]

- Yazicioglu K., Yavuz F., Goktepe A., et al. (2012 – Ankara, Turkey) also realized a study with a goal a little bit different from the others mentioned, but that also had in consideration the studied variable (the quality of life): comparing the quality of life and the life satisfaction of practitioners and non- practitioners of adapted sports. They applied the WHOQL-bref questionnaire and the SWLS and some other questions (demographics data and health condition) to a sample of 60 adult individuals with physical disability, 30 practitioners of sport and 30 non- practitioners. They concluded, based on the obtained results, that it existed

significant differences in terms of demographic data between the two groups, that in the physical, psychological, social and general domain, in the average of all the domains and in the SWLS results, the practitioners of adapted sports demonstrated present significant and higher values comparing to the non-practitioners (without significant differences in the environmental domain). [30]

It is also worthy to mention, another study that was realized because, in spite of having a bit distinct goal– verify if the individuals that use wheelchairs and participate in sports have a significant difference in the social skills index in comparison with non-practitioners – evaluates social skills which mean, a component that is part of the quality of life. This study also demonstrates different results comparatively with the previous studies:

- Feiten G. & Pergher G. (2010 – Taquara, Brazil) used a questionnaire of demographical data and a social skills index and applied it to a sample of 60 adult individuals that used wheelchairs to move, being 30 athletes for more than a year e 30 non-practitioners in a regular physical activity and concluded that no significant differences exist in the social skills between practitioners and non- practitioners of adapted sports (68.37% and 55.30% respectively) – that existed only small significant differences in the parameters: "confrontment and self-affirmation with risk", "self-affirmation in the expression of negative feelings" and "self-control of the aggressiveness". [31]

So, by the obtained conclusions in this articles, it is observed that in all the studies were found significant differences between the two groups – practitioners and non-practitioners of adapted sports -, but that the differences found are not totally in agreeance because of the variation in the different domains and in terms of the obtained values by groups. Despite these differences being noticeable it is important to highlight that the studies found present individuals with different characteristics and also that the study methodology used was different in the several studies.

Considering now the specific aims outlined in this study, it is intended to understand if it exists a relation between the average and the order of perception of quality of life of the participants in adapted sports of the sample and what is described in the literature; the gender, the age, the type of disability and the value of quality of life obtained in the questionnaire; and the type of disability and the type of sport practiced.

The first specific aim to be explored is if the average and the order of perception of quality of life of the practitioners of adapted sports of the sample corresponds to what is described in the literature. As it is known several studies that analyzed the perception of the quality of life of practitioners of adapted sports already exist and some of them also used the instrument of measure WHOQOL-bref – in the sequence, there will only be described the studies that used the WHOQOL-bref instrument in order to be possible to compare with clarity, the obtained results in our study with the studies made before:

- Noce F., Simim M. & Mello M. realized the study which was described before and they also concluded that the results of quality of life varied between the environmental (53.85%) and the psychological domain (81.94%) – being the order: environmental < physical <social <psychological domain; and the average of the domains evaluated in: 71.61%.[25]

- Chun S., Lee Y., Lundberg N. et al., (2008 – Colorado) also realized a study, with the goal of analysing the contribution of the integration in the community, in the quality of life, of persons with disabilities (vertebral and spinal cord injuries, development problems and orthopedic dysfunctions) and participants in a community program of adapted sports. It was applied the WHOQOL-bref instrument and an instrument for the evaluation of the community integration to a sample of 93 individuals practitioners of a center of adapted sports in Colorado with several types of disabilities. With this study it was concluded that the perception of quality of life in the sample varied between the social (65.62%) and the environmental domain (78.89%) – being the order: physical <psychological <social domain; and the average of the domains evaluated in 73.87%.[24]

- To finish, Borges R. & Tolocka R. (2011 – Brazil) also realized a study with the aim of verifying the relation between the quality of life of the people with physical disability and the practice of sports. For that it was applied the WHOQOL-bref instrument in a sample of 48 practitioners of athleticism and swimming and it was concluded that the average level of perception about their own quality of life is good, that the disability does not constitutes a factor of negative influence in the perception of themselves about their own satisfaction with health (because of most of them referred that they were satisfied with their own health) and that the average of quality of life by domain varied between the environmental (54.77%) and the psychological domain (76.67%) – being the order: environmental <physical <social <psychological domain; and the average of the domains evaluated in: 68.33%.[26]

In our study, the sample presents an average of perception of quality of life, like it was mentioned before, of 64.32%, varying between the psychological and the general domain (being the order: psychological < physical < environmental < social relations < general domain).So, it is verified that the obtained average is inferior to the ones found in the literature, even in studies that presented samples and methodologies more similar to what was realized and that the order is also distinctive between the studies found in the literature in comparison with ours. Only the studies of Noce F., Simim M.& Mello M. and of Borges R. &Tolocka R. presented the same order of perception of the domains, which is interesting because, while the study of Chun S., Lee Y., Lundberg N, et al. was made with a sample of Colorado and with people with different types of disabilities and ours that was made in Portugal and with people with the several types of disabilities, these two studies, were made in Brazil and with a sample of individuals with only physical disabilities.

As second specific aim, there is the relation between the gender and the value of quality of life obtained in the questionnaire. There was only found one study that mentioned this issue, the study realized by Chun S., Lee Y., Lundberg N. et al, already approached before, this study concludes that the gender demonstrates a relation between the environmental domain, since the individuals of the female gender perceive their quality of life level as being higher, presenting significant differences between the two genders and reports that the other domains are not associated with gender. But in the collected sample it is understood that it seems to exist a relation between gender and the obtained values in the quality of life, since the individuals of the male gender perceive their quality of life as being more favourable, with the exception of the general value of the quality of life, which are the individuals of the female gender that perceive being the more favourable, but there don't exist significant differences that prove it.[24]

As third specific goal, there is the relation between the age and the obtained value of quality of life in the questionnaire. According to the study realized by Noce F., Simim M. &Mello M., also mentioned before, it was considerate that the aging process promotes a decline in the functional capacity of the individual and a maintenance of the mental health since it was verified in the analysed sample that the age compromises in fact more markedly the dimensions of the physical domain. In our study that association could not be proved since, despite the individuals of the group age of 18-64 years perceive the physical domain as being the weaker of their quality of life, the individuals of the group age of + than 65 years which

means the group with the more advanced age, perceive as being the less favourable the psychological domain (the physical domain is the third value considerate as being the less positive). On the other hand, it can be considered in fact that the group of the + than 65 years presents a decline in their functionality because, despite the exception of the general domain, all the others domains represent a smaller average value of quality of life in comparison with the other group ages. Also in this sample contrariwise to what was found in the Noce F., Simim M. & Mello M. Study it's not verified the maintenance of the mental health because the individuals of the group age of + than 65 years demonstrated an average value of quality of life in the psychological domain relatively low and being the one that was perceives the worse. In spite of the obtained results demonstrate these conclusions, the same cannot be considerate representative or significant to the Portuguese population with disability since only 3 of the 116 individuals in the sample are in this group age (+ than 65 years). [25]

Lastly, the fourth specific aim is to understand if the type of disability has any relation with the obtained value of quality of life in the questionnaire or with the sport activity practiced. By the obtained results in the analysis of the quality of life questionnaire, it is understood that depending on the type of disabilities, the domains more and less favorable are distinct. Relatively to the sport activity practiced, in the sample it is demonstrated a global preference for adapted swimming, all the individuals with multiple disabilities and the majority of the individuals with mental disability practice this sport, although these the remaining individuals did not demonstrate a so marked expression in the practice of it, being dispersed by a larger number of sporty modalities.

CONCLUSION

The results of the realized study demonstrate that the adapted sports seem to improve the levels of the quality of life of its practitioners, in its own perception (general domain).

By the fact of the study accomplished be an exploratory study, many relations, between the variables of the quality of life and the adapted sport, don't be realized. For this reason, in the future, it's important to verify, for example, the influence of the personal factors in the quality of life of people with disabilities or of the use of bigger samples and a more equitable distribution by group ages, types of disabilities or yet with a bigger number of individuals that realized a regular practice of adapted sports (more than three times a week).

By our perception and also by the reaction of some respondents, the instrument of measure used in this study does not seem to be sensible enough for the alterations in the quality of life of this same population, being necessary to realize one adaptation to this instrument, in the future.

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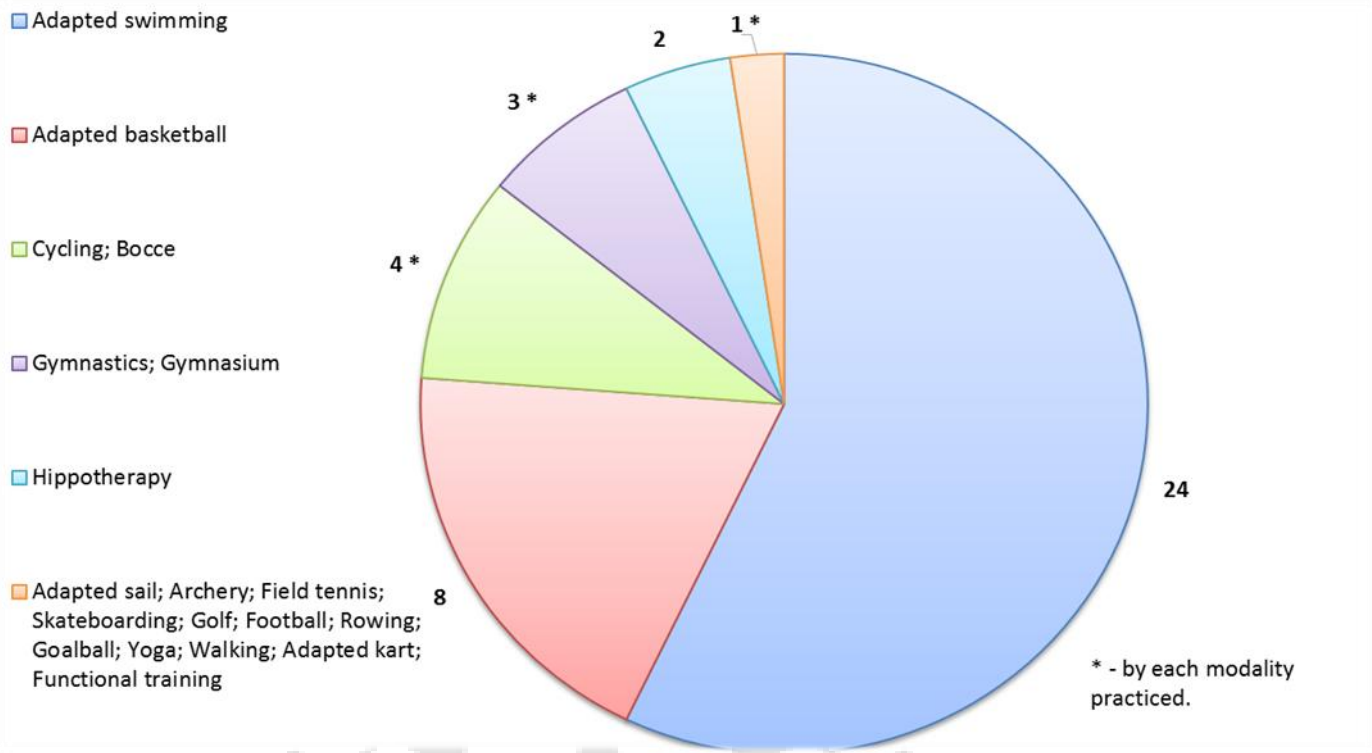

Figure 1 –*The distribution of the practitioners of adapted sport by sporty modalities.*

Table 1 – *Percentage of individuals of the group 1 and 2 by age gap, civil status and educational level.*

	Group 1 –				
Age groups	*0-17 years*	*18-65 years*	*+ than 65 years*		
	5.45%	90.91%	1.82%		
Civil status	*Single*	*Married*	*In union facts*	*Divorced*	*Widow*
	67.72%	16.36%	7.28%	7.28%	1.81%
Level of education	*Univercity education*	*High school*	*Basic education*	*Know how to read and/or write*	*Know how to read and/or write*
	29.09%	29.09%	25.45%	12.73%	3.64%
	Grupo 2 –				
Age groups	*0-17 years*	*18-65 years*	*+ than 65 years*		
	9.84%	85.25%	4.92%		
Civil status	*Single*	*Married*	*In union facts*	*Divorced*	*Widow*
	65.57%	18.03%	4.92%	4.92%	1.81%
Level of education	*University education*	*High school*	*Basic education*	*Know how to read and/or write*	*Know how to read and/or write*
	29.51%	37.75%	24.59%	0.00%	8.20%

Table 2 – *The averages percentages of the levels of the quality of life in this sample by genders, age groups, types of disabilities and by the practice of adapted sport and the respective differences between the groups.*

	Domains of the quality of life					
Genders	*Physical*	*Psychological*	*Social*	*Environmental*	*General*	***Average***
Female (F): n=51	60.75%	55.99%	64.50 %	63.72%	74.27%	63.85%
Male (M): n=65	62.47%	59.66%	66.40 %	64.65%	70.54%	64.74%
Differences (F-M)	-1.72%	-3.67%	-1.90%	-0.93%	3.73%	-0.90%
Age groups	*Physical*	*Psychological*	*Social*	*Environmental*	*General*	***Average***
0-17 years: n=9	57.54%	55.09%	60.19 %	64.93%	74.44%	62.44%
18-64 years: n=102	66.07%	70.83%	70.83 %	76.56%	85.00%	73.86%
+ than 65 years: n=4	59.82%	51.04%	54.17 %	65.63%	77.50%	61.63%
Types of disabilities	*Physical*	*Psychological*	*Social*	*Environmental*	*General*	***Average***
Physical-motor disability: n=6	51.79%	61.11%	69.44 %	62.50%	68.33%	62.63%
Physical disability: n=13	58.79%	59.29%	60.90 %	62.74%	67.69%	61.88%
Motor disability: n=51	61.34%	58.58%	66.50 %	65.87%	71.57%	64.77%
Mental disability: n=22	67.05%	54.55%	66.67 %	64.35%	80.91%	66.70%
Sensorial disability: n=4	55.36%	58.33%	39.58 %	50.00%	62.50%	53.15%
Visual disability: n=8	66.07%	62.50%	62.50	65.23%	73.75%	66.01%

			%			
Hearing disability: n=6	61.90%	49.31%	66.67 %	55.21%	56.67%	57.95%
Multiple disabilities: n=6	59.52%	63.19%	76.39 %	70.31%	75.00%	68.88%
Practice of sports	*Physical*	*Psychological*	*Social*	*Environmental*	*General*	***Average***
Practitioners (P): n=55	62.79%	57.12%	68.33 %	65.23%	75.27%	65.75%
Non-practitioners (NP): n=61	60.71%	58.88%	62.70 %	63.17%	69.02%	62.90%
Differences (P- NP)	2.08%	-1.76%	5.63%	2.06%	6.26%	2.85%

Table 3– *Obtained significant differences by the realization of the 'Student's 't' test.*

General domain of the quality of life	Sig.
Practice of AS	0.004*
Age group of 18-64 years	0.041*
Motor disability	0.031*

*p≤0.05 – significant differences.