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Abstract

Objectives: We aimed to identify the demographic characteristics of oncological patients applying for a Health Board Report (HBR), the differences between the evaluation criteria in the oncology section of disability and incapability regulations and the discrepancies within the disability regulation in the field of oncology leading to potential loss of rights as well as identifying the possible interpretation differences and offering solutions to address them.

Methods: Sociodemographic data of 375 subjects who applied for a HBR between 2019 and 2023, including the reason for applying to the health board, and the oncology section score they obtained in accordance with the disability regulations is recorded.

Results: A comparison of the disability and incapability regulations showed that 11.5% of the patients experienced loss of rights in accordance with the current regulations. The oncological scores of stage 1, 2 patients increased according to the current regulations while there was a reduction in the oncological scores of stage 3 patients (p<0.001).

Conclusion: An update in the current regulation, considering the gaps or the aspects that might have been perceived differently by clinicians will help prevent the loss of rights for patients who apply to the Health Board due to disabilities.

Keywords: Cancer, disability, regulations, incapability

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The quality of life of disabled population and the quality of services provided to them are important national health indicators that play a significant role in the development of the country. Regulations have been made in tax law with the aim of facilitating the participation of disabled individuals in socioeconomic life and eliminating the inequality of competition between the disabled and the non-disabled. The International Labor Organization reports that people with severe or mild disabilities make up 15% of the world’s population, and about 4 out of 5 of them are of active working age. In Turkey, according to Article 30 of the Law No. 4857 on Labor, employers are obliged to employ disabled workers in their workplaces. Under this law, disabled individuals to be employed must be at least 14 years old and provide a HBR certifying a disability of at least 40%. According to a population and housing survey, the employment rate of the disabled in Turkey is 22.1%. Thanks to the employment policy provided for disabled individuals in the light of legal regulations, their participation in workforce will enable them to benefit from insurance coverage, which will lead to a reduction in the social aids and services provided to disabled individuals from the social security budget.

In Turkey, individuals apply to the Health Board to access health and social rights such as home care payment, care services, disability pension, pension for a relative of the disabled, employment quota for the disabled, free travel, retirement, tax reductions or exemptions. Until February 20, 2019, Health Board assessment was based on the provisions and attachments of the Regulation on Disability Criteria, Classification and Health Board Reports for Disabled Individuals published in the Official Gazette no. 28603 dated 30.03.2013, however in the current practice, it is calculated according to the provisions and attachments of the Regulation on Disability Assessment for Adults published in the Official Gazette no. 30692 dated 20.02.2019. A literature review showed studies providing an overall review of the Health Board applications as well as studies focusing on neurological diseases, rheumatologic diseases, psychiatric diseases, and locomotor system diseases. Additionally, there are articles focusing on Health Board applications for geriatric population and childhood.

However, there is no study in the literature examining the Health Board applications of oncology patients. Due to absence of research on this topic, we aimed to determine the demographic characteristics of oncologic patients applying for a HBR, differences between disability regulation and incapability regulation assessment criteria in the oncology section, and the discrepancies within the disability regulation in the field of oncology, leading to potential loss of rights as well as identifying possible interpretation differences and offering solutions to address these issues.

**Methods**

This study was conducted in compliance with the ethical principles of the Declaration of Helsinki, and approved by the Local Ethics Committee. In this retrospective study, we retrieved and analyzed the records of 791 patients who presented to the Zonguldak Bülent Ecevit University Faculty of Medicine Hospital between 2019 and 2023 to obtain a HBR and were evaluated in the Medical Oncology outpatient clinic. Patients under 18 years of age, patients with repeated visits, patients with two or more independent malignancies, those applying for status determination and those applying for disability retirement were excluded. A total of 375 patients who met the inclusion criteria were analyzed.

Sociodemographic data of the patients such as age and gender, along with the year of the HBR, the reason for applying to the Health Board, tumor site, tumor stage, and the oncology section score they obtained according to the Regulation on Disability Evaluation for Adults, were recorded. We also calculated the oncology section score of the same patients according to the Regulation on Disability Measurement, Classification and Health Board Reports for the Disabled as well as the difference in score compared to the disability regulation and entered them into the database.

Descriptive statistics for continuous data were presented as mean±standard deviation, median, minimum, maximum, minimum, maximum, and percentage values were provided for discrete data. The normal distribution of continuous data was assessed using the Shapiro-Wilk test. Group comparisons of nominal variables were made using the Chi-Square/Fisher’s Exact test (for cross tabulations).

Statistical analysis of the study was performed using the Statistical Package for Social Sciences (SPSS) version 22.0 software (IBM Corp., Armonk, NY, USA). A p value of <0.05 was considered statistically significant.

**Results**

Of 375 patients included in the study, 209 (55.7%) were female and 166 (44.3%) were male. The mean age of patients was 60.14±13.35 years, with the youngest being 23 years-old, and the oldest being 90 years-old. The most common three cancers in the study population were breast cancer (n=114, 30.4%), lung cancer (n=63, 16.8%) and colon cancer (n= 57, 15.2%), respectively. More than one third of the patients had stage 2 disease at the time of diagnosis (n=135, 36.0%) (The patient characteristics are summarized in Table 1).
An analysis of the distribution of Health Board applications by year showed that the number of applications was the highest in 2020 (n=126, 33.6%). Based on the analysis of the distribution of disease stages at the time of the health board application, the two most common disease stages were stage 2 (n=127, 33.9%) and stage 4 (n=126, 33.6%), respectively. 50.4% of the patients were not in remission. The most common reason for applying to the Health Board was to benefit from social care rights (n=161, 42.9%).

The average disability rate for oncological diseases according to the disability regulation was 65.0±16.5 (min: 40, max: 80), while the average incapability rate for oncological disease was 56.9±28.86 (min: 20, max: 80). When the rates calculated according to the regulations are considered; there was no change in 53.1% of patients, while it was increased in 35.5% of patients, and decreased in 11.5% of patients. In this regard, a comparison of the two regulations showed that 11.5% of the patients suffered a loss of rights according to the current regulation (The results are summarized in Table 2).

When Health Board applications are examined in terms of stage and tumor sites, the most frequent applications were related with stage 2 breast cancer (The distribution of tumor sites by stage is shown in Figure 1).

An analysis of the reasons for applying to the Health Board by stage showed that except for stage 1, the most common reason for application was to benefit from social care rights. In stage 1, the most common reason was to benefit from disability rights (Reasons for applying to Health Board by stage is shown in Figure 2).

When the differences in rates between the regulations are analysed by stage; there was an increase in the oncology scores of stage 1 and stage 2 patients when evaluated according to the current regulations compared to the previous regulation, while there was a decrease in the oncology scores of Stage 3 patients (p<0.001). It appears that stage 3 patients experienced a proportional loss of rights under current regulations compared to the previous one (p<0.001) (Table 3).
Discussion

The mean age of patients was 60.14±13.35 years, with the youngest being 23 years-old, and the oldest being 90 years-old. When compared to other studies evaluating the Health Board applications; the mean age was 33.18±26.63 years in a study by Baltaci et al.;[12] 49.6±26 years in a study by Terzi and Altin;[17] 36.97±25.76 years in a study by Cem et al.;[13] 77.62±7.74 years by a study Koca et al.;[18] and 38.24±15.07 years in a study by Yildiz et al.[16] The differences between our study and the literature may be attributed to the selection of the study population.

When we examined the distribution of patients by gender, the female-to-male ratio was 1.25. Studies that included all age groups have reported a higher incidence of disability in men compared to women.[13,20] Given that women often have a greater need for social rights, we might have had a higher proportion of women when compared to general population data.

An analysis of the patients by their tumor site showed that the most common diagnosis for women was breast cancer (n=114, 30.4%), while it was lung cancer for men (n=63, 16.8%). There was no comprehensive study specifically evaluating the diagnoses of oncology patients applying to the Health Board. Typically, studies tend to focus on the prevalence of disability within the general population. A study conducted by Benli et al. reported that among patients applying to the Health Board, the most common disabilities involved the musculoskeletal system (n=976, 37.0%), while the least (n=8, 0.3%) involved disabilities related to gynecological conditions, and 1.4% of patients (n=37) had oncological diseases.[11] In a study examining those who applied to the Incapability Health Board in Malatya in 2015, most of the applications was made to the pediatric psychia-

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*: Chi-Square Test/Fisher’s Exact Test.
the oncology section may still lead to contradictions among themselves. When evaluating tumors based on stage; the remission process of stage 3 cancer is difficult to interpret for clinicians as it is not detailed enough. The scoring for this patient group during the remission process was lower than the scoring for stages 1-2 (up to the 5 year after remission), which suggests a scoring error in stage 3 cancer, where the estimated survival is lower. Furthermore, having similar scores in patients with stages 1-2 and stages 3-4 at 5 years after remission raises another point of discussion. An analysis of the differences in disability rate between the regulations by stage taking this fact into consideration showed that there was a significant increase in the oncology scores of stage 1 and stage 2 patients when evaluated according to the current regulation compared to the previous regulation, while there was a decrease in the oncology scores of stage 3 patients. Therefore, it appears that stage 3 patients experience a loss of rights by the current regulation compared to the previous regulation.

While the disability regulations are updated to comprehensively address the situations encountered in practice with the developments in medical science day by day, it still has shortcomings. Developing an updated regulation by taking into account the deficiencies or aspects that may be interpreted differently by clinicians will help prevent the loss of rights for patients applying to the Health Board for disability.

Issuing HBR for individuals with disabilities is a common practice for medical oncology professionals in hospitals. Therefore, we believe that the present study will increase the awareness of both subspecialty residents and specialists about the relevant legislation.

In Turkey, with this recent update in the disability regulation of cancer patients, there may be differences in interpretation among clinicians when determining disability rates, therefore further comprehensive studies involving different centers focusing on this issue would be beneficial for achieving standardization in practice.

The prolonged life expectancy as a result of the rapidly advancing treatment options in the field of medical oncology combined with socioeconomic and psychological disorders and environmental problems points to an increase in the number of disabled individuals in the future. Consequently, this situation will generate psychosocial, physical and economic problems within society. Therefore, in the light of studies to be carried out, efforts should be directed to prevent disability with a focus on the desires of disabled individuals, ensuring the participation of disabled individuals in society, and addressing issues related to their rehabilitation, care, education, health, employment and social rights.
Disclosures

Ethics Committee Approval: This study was conducted in compliance with the ethical principles of the Declaration of Helsinki, and approved by the Local Ethics Committee.

Peer-review: Externally peer-reviewed.

Conflict of Interest: None declared.


References

6. World Health Organization International Agency for Research on Cancer. Estimated age-standardized incidence rates (World) in 2020, all cancers, both sexes, all ages [Internet]. [cited 2023 Aug 1]. Available from: https://gco.iarc.fr/today/online-analysis-map?v=2020&mode=population&mode_population=continents&population=900&populations=900&key=asr&sex=0&cancer=39&type=0&statistic=5&prevalenc e=0&population_group=0&ages_group%5B%5D=0&ages_group%5B%5D=17&nb_items=10&gr