

## **Anxiety in persons with visual impairment**

Katarzyna Weronika Binder<sup>1</sup>, Magdalena Agnieszka Wrzesińska<sup>1</sup>,  
Józef Kocur<sup>2</sup>

<sup>1</sup> Department of Psychosocial Rehabilitation, Medical University of Lodz

<sup>2</sup> University of Computer Sciences and Skills, Lodz

### **Summary**

Anxiety and anxiety disorders among people with visual impairment are more frequent than in the general population. It is estimated that 1/3 of people with visual impairment face depression and/or anxiety, whereas 4–6% of people are diagnosed with anxiety disorders. The purpose of this paper is analyzing the occurrence of anxiety in people with visual impairment based on current information. Literature review indicates that people with visual impairment experience the common, as well as the more specific, often chronic anxiety symptoms. Despite the significance of the foregoing phenomenon and its negative consequences, literature does not explain its causes, specify the problem, and most importantly, does not provide recommendations for preventing the occurrence of anxiety in the foregoing group of people. In order to understand the nature of anxiety, it is important to learn more about its causes and consequences for health, both biopsychosocial and spiritual wellbeing. In people with visual impairment this may depend on particular conditions which these people face every day, therefore the concept of anxiety in this group of people requires a separate consideration.

**Key words:** anxiety, anxiety disorders, visual impairment

### **Introduction**

In ICD-10, anxiety disorders are classified in the group of neurotic disorders and include: general anxiety disorder, phobic anxiety disorder, panic disorder, obsessive-compulsive disorder as well as stress-related disorders – acute and post-traumatic [1]. Furthermore, anxiety may also be observed in people with anxious (avoidant) personality disorder and may accompany other psychopathological symptoms, which are most commonly expressed by depressive-anxiety syndrome. Anxiety may also be analyzed in a wider sense, e.g., as an attitude towards an illness (both of persons with disabilities as well as their guardians), or stages of dealing with disability [2].

The International Classification of Functioning, Disability and Health (ICF) describes the vision function as a sensual function used to experience the world and form, size, shape, and color of the visual stimulus. People with visual impairment are a heterogeneous group, which results from the diverse period of the occurrence of visual impairment, its causes, severity, and scope [3].

As estimated by statistical analysis, in 2015 there were over 34 million of blind people worldwide, over 24 million had severe visual impairment, 214 million – moderate and 663 million had mild visual impairment. Vision loss is the third cause of disability, right after anemia and hearing impairment; in terms of vision deficits, the index of years lived with disability is significantly lower than that associated with anxiety disorders [4]. Meta-analyses allow us to predict that by 2050 the number of people with myopia, which is the main cause of visual impairment, will increase and include over a half of the general population [5]. According to the Central Statistical Office, over 60,000 Poles over 15 are people with visual impairment [6].

### **The prevalence of anxiety and anxiety disorders among people with visual impairment**

It has been indicated that people with visual impairment experience higher level of anxiety than people without disabilities [7, 8]. It is estimated that one third of people with visual impairment face depression and/or anxiety, whereas 4–6 % of people are diagnosed with anxiety disorders. It has been shown that during the last four weeks 15.6% of people with visual impairment expressed anxiety symptoms, as compared to 10.7% of people without visual deficits. The above-mentioned research shows that both the subthreshold symptoms, which do not comply with the diagnostic criteria, as well as those which help in diagnosing depression or anxiety disorders, are a significant health problem mainly of the elderly people with visual impairment [9]. Other research has revealed this symptom in over 30.1% of elderly people with age-related macular degeneration (AMD) [10]. Van der Aa et al. [11] confirmed the occurrence of panic anxiety without agoraphobia during the last month in 0.16% of people with visual dysfunctions and with coexisting agoraphobic symptoms among 0.33%. On the other hand, the prevalence of agoraphobia without panic was observed in 4.2% and social phobia in 2.4% of people in this group. General anxiety disorder within the last six months was observed in 1.8% of people with visual dysfunctions [11].

Research conducted in Korea among people with anophthalmia showed that anxiety disorders occur in about 30% of subjects [12], while in Japan such disorders occur in almost 26% of people with high myopia [13]. According to the authors, high myopia is very often present in the patients' productive age, has greater influence on social functioning and is a more significant burden to families and the society than AMD or glaucoma. Cataract surgery is described as a factor which is significantly associated with the occurrence of anxiety disorders because, in the case of high myopia, cataract surgeries are performed in a younger age not only to treat the cataract itself, but also to decrease the increasing fear of the progression of myopia. It has also been determined that depression and anxiety disorders in people with high myopia are more frequent

than in the general population, but are less frequent than in people with life-threatening [13] or other chronic diseases [14].

### **Factors associated with the occurrence of anxiety in the case of visual impairment**

Anxiety is one of psychological consequences of the loss of vision. Literature emphasizes the fact that psychological reactions to such stressful situation may depend on, e.g., the age in which the dysfunction occurred, its influence on everyday functioning, the system of formal and informal support as well as the used adaptive strategies [15]. Reports confirm that people who lost sight before they turned 12 present a higher level of anxiety than those who lost their vision later in life [16]. Research conducted among Japanese massage practitioners with visual dysfunction shows that the level of anxiety decreased with age. It was also shown that marriage was among the protective factors and that high anxiety levels were associated with the tendency to repress emotions. It has also been reported that trait anxiety correlates positively with helplessness and daily hassles, and a negatively with self-assessment and perceived emotional support [17].

Research conducted on people with AMD shows that loss of vision in one eye and an accompanying fear of losing vision in the second eye may be more stressful than losing vision in both eyes [18]. Similarly, higher psychological costs (including higher level of anxiety and lower quality of life) are observed with a milder vision loss [17, 19]. This is probably due to a constant fear of further deterioration of eyesight in people with moderate disability, whereas people with a more severe deficit are more likely to accept the disability more quickly [17]. Furthermore, people with a moderate deficit experience difficulties in interpersonal communication, while their disability is invisible to others. Therefore they are expected to communicate in a manner typical for a healthy person, and the need to meet this expectation often has a negative influence on their mental condition [17].

### **The process of acquisition and acceptance of disability vs. anxiety**

According to Stelter [20], people with disabilities may suffer from the so-called total suffering, which includes physical, emotional, social, and spiritual suffering. Spiritual pain is expressed in the fear about the future and in existential anxiety. Emotional suffering is associated with fear of pain and the feeling of danger resulting from the different appearance and functioning. Finally, anxiety is one of the responses to physical suffering, pain and their consequences as well as to the difficulties in social life [20].

Vision loss is a traumatic experience [21] which forces a person to adapt to the new situation, to reformulate their life plans and find their place in a new social group (transfer from the group of physically fit people to a group of people with disability). According to the suspension theory, this situation is related to the inconsistency between the image of oneself, the vision of one's life and the present situation; it distorts the image of the future and undermines the sense of any future decision made. This leads

to anxiety, resentment and anger. The concept assumes that disability may be a turning point in a person's life and have a developmental meaning, however, the foregoing suspension condition may, according to the author, last even a few years [22].

The process of gradual deterioration of vision until a complete loss of vision in one eye, together with an emotional condition including anxiety, is described by Sacks [23] based on own experience. In his case, anxiety associated with vision impairment was intensified by melanoma diagnosis and fear for his own life. On the other hand, the following situation presents fear of a 5-year-old boy after losing his sight (i.e., in the initial stage of adaptation to disability, in the so-called shock stage): "I noticed a change after breakfast, I could not see almost anything. When I came closer, I could distinguish the blue color of the door between the kitchen and the room. I got scared. I started to cry. I hugged my mom and couldn't say a word. Finally, I managed to say: Mommy! I can't see... I stood there silent, scared of my mom's tears and sadness, and afraid of going to the hospital again. This feeling of fear was overwhelming, I couldn't even cry from fear" [24, p. 61]. In the first stage of disability, anxiety is one of the most common emotions. It may be caused by the perception of the current situation and may include the method of treatment, fear of the hospital, deprivation, separation from family. In situation when disability is acquired gradually, distress, the feeling of danger and anxiety may occur after some time, when the symptoms are more noticeable and troublesome. The risk of fear of further loss of fitness increases with increasing severity of disability and becomes a constant element of the child's emotionality together with periods of hope of recovery. The next danger is fear of being rejected by others.

The next stage of adaptation to disability, specified as the stage of learning about one's limitations or the depression stage, starts with the analysis of own situation and with an attempt to understand the consequences. In terms of emotional experience, a person may still experience anxiety associated with the need of taking certain actions in different conditions (e.g., fear of moving around). This is intensified by initial failures. In the next stages – an attempt to live with the disability and adapting to it – we may observe a change in psychosocial functioning and the perception of one's current situation; anxiety decreases. However there is a risk of crisis, e.g., in the maturation period, associated with shaping one's future, choosing a career, entering into a relationship [24].

### **Specificity of anxiety experienced by people with visual impairment**

Fears experienced by people with visual impairment, apart from the most common ones, may also include fear of moving around on an unknown territory [25], fear of falling [26], or fear of staying in particular places or situations (e.g., in a bus, in a crowd, public speaking or eating with others), which was described by van der Aa et al. [9] in relation to the elderly people with visual deficits. Limitations resulting from visual dysfunctions together with an actual or anticipated lack of adapting the school or workplace to the needs of the disabled raise fear of undertaking educational or occupational activity [25]. Furthermore, reports have described anxiety

experienced by people with visual deficit in a relationship with a person without disability [27, 28].

Literature describes characteristic personality features of people with primary glaucoma, which include unspecified or specific anxiety associated with staying at home and with the disease process. Based on the personality determinants, primary glaucoma is described as a psychosomatic disease [29].

Visual impairment may be associated with the occurrence of secondary disorders, such as Charles Bonnet syndrome, which affects approx. 12% of older people with visual deficits and is manifested by hallucinations of different form and intensity. Their forms may be so terrifying and troublesome that people suffering from them experience anxiety, and then fear of their own mental health [30].

### **Consequences of anxiety associated with visual impairment**

Czerwińska [25], in her paper on people losing their eyesight, states that increasing changes and their influence on the functioning of a given person make it difficult to conduct an adequate evaluation of a person's own potential. As a result of fear of losing one's eyesight, a person may adopt an extremely defensive attitude, where a person is extremely cautious and does not undertake any new challenges or, on the contrary – a person behaves in a risky way with the hope of improving his/her vision, which is closely connected to defensive mechanisms of denial and repression [31].

Anxiety disorders are the major risk factor (before a decreasing vision in the better eye and depression) which decreases the quality of life associated with vision in people with high myopia [13]. A similar influence has been confirmed with the co-existence of depression in people with chronic ophthalmic diseases, such as AMD and glaucoma [10, 32, 33]. This dependence may be examined in two ways – low quality of life caused by visual disorders leads to mental disorders, and, on the other hand, mental disorders caused by vision deficits decrease the quality of life [13].

### **Interventions associated with reduction of anxiety among people with visual impairment presented in the literature**

Yokoi et al. [13] believe that early detection of mental disorders in patients with high myopia may have a positive influence on the health-related quality of life. Based on the conducted research, the authors recommended using two statements as a method of screening for anxiety disorders. They are derived from the Hospital Anxiety and Depression Scale (HAD-S) and read as follows: "I can sit at ease and feel relaxed" and "I get sudden feelings of panic".

Mental condition of people with health difficulties is closely related to their functioning in the society. Van der Aa et al. [11] conducted a meta-analysis on the influence of psychosocial intervention on improving mental condition, also in terms of anxiety of the person with visual impairment. Observations on visual impairment led to the development of an Israeli program aimed at supporting grandmothers and grandfathers with visual impairment worried about their contact with grandchildren

[34]. Due to a negative influence of difficulties in communication on the mental condition of people with visual impairment, there is a need to develop specific skills in this area [17]. Sun et al. [29] described a positive impact of psychological therapy and participation in supportive groups on the emotional condition and quality of life of people with primary glaucoma, whereas Ueda and Tsuda [35] recommend group work with individual cognitive therapy to decrease distress, including tension and anxiety in people with acquired visual impairment. Applying of a 20-week program aimed at psychosocial rehabilitation of people over 55 with vision deficits [36] led to a decrease of fear of falling due to poor eyesight, as well as general fear in the first period after the intervention. The level of the latter increased in the examination conducted after 6 months, which, according to the authors, could be caused by the winter season and suggests implementing additional reinforcing sessions.

Kucharczyk [37] emphasizes the role as well as difficulty of developing skills used to understand emotions, emotional maturity and social understanding in children with visual impairment. Acquiring those skills is made difficult by the lack of the possibility to observe and imitate others as well as by poor interpersonal relations. Therefore, children may have difficulties in describing their emotions, which leads to the need to learn how to communicate those feelings, fears and difficulties.

Van der Aa et al. [9] describes a program of gradual help in terms of depression and anxiety disorders in the elderly people with visual impairment, which engages occupational therapists, social workers and psychologists from organizations dealing with visual rehabilitation. The program, based on an individual analysis of patients' needs, included an observation period, counselling regarding self-help based on cognitive-behavioral methods, problem-solving training, and medical consultations. It was found that this form of work may reduce symptoms of depression and anxiety disorders as well as protect against their development, and it leads to the improvement of quality of life.

Analysis of the literature shows that the highest number of interventions aimed at decreasing peoples' anxiety associated with vision deficits was conducted in people after cataract surgeries. The first report from 1981 recommended using stereo headphones with relaxing music [38]. 35 years later, there was a similar suggestion which stated that music may help decrease the perioperative anxiety [39]. Other methods included acupuncture [40] and hand massage [41]. Furthermore, attention was paid to the role of informing the patients before the surgery, educating them and planning future care [42].

## Conclusions

Visual impairment is associated with a high risk of different psychopathological symptoms. However, as proved by researches, there is a lack of appropriate and unique diagnostic and psychotherapeutic procedures that will provide proper functioning of persons with visual impairment already in childhood and adolescence [43].

On the basis of literature review, we can state that there is higher risk of anxiety disorders among people with visual impairment, which can have negative influence on their quality of life as well as health and social functioning. Epidemiological prognosis

that indicates rapid growth of persons with sight deficits in general population allows to predict that the number of persons with anxiety disorders will grow as well. Papers used in this publication do not exhaust the raised issue. With regard to methodological aspects, including those associated with heterogeneity of a group of people with visual impairment, not all results can be generalized. The number of publications that describe psychosocial interventions that could reduce the level of anxiety and in consequence improve the quality of life and functional efficiency of persons with sight impairment is still insufficient. Until now most of reports have been performed in a population of elderly people.

Observation of functioning of people from the discussed group and information obtained from them allow to state that solutions presented in the literature on reducing anxiety are not commonly used. On the one hand, patients focused on ophthalmologic treatment do not search for help to improve their psychological health and on the other, there is a great need to increase the awareness of this problem among ophthalmologists in order to make them pay more attention to emotional experiences of their patients that can be associated with sight deficits. In particular, it should be emphasized that a psychiatrist also plays a valid role in an interdisciplinary team responsible for psychosocial rehabilitation of a person with visual impairment. Experience shows that at different stages of psychiatric rehabilitation of blind and poor-sighted people there is a need not only for pharmacological help in the treatment of psychiatric disorders but also for psychotherapy, counselling regarding, e.g., planning life in conditions changed after the loss or deterioration of sight, motivation to benefit from existing forms of support from self-support groups and associations as well as emotional and informational support of persons from the environment. As suggested by the authors of the publication on psychosocial rehabilitation of people with vision impairment [9], providing support by psychologists and social workers can be preventive and protect against depression and anxiety disorders. However, this help is insufficient if a person already had episodes of psychiatric disorders before problems with sight. In this situation pharmacotherapy and more intensive psychiatric and psychological interventions are essential [9].

Interdisciplinary research on diagnosis, prevention and therapy of anxiety disorders among persons with visual impairment are indispensable to improve the effectiveness of work of psychiatrists, psychologists, pedagogues, and ophthalmologists. There is also a need of further development of research not only among adults and elderly people, but also in a group of children and adolescents because of small number of studies on this issue conducted so far. Development of research on this issue should bring results that will allow to work out recommendations for interdisciplinary teams in which ophthalmologists, psychiatrists, psychologists, and members of other professions will collaborate to improve the psychiatric rehabilitation among persons with visual impairment, which can have a positive influence on their quality of life and on reducing costs of healthcare.

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## References

1. International Statistical Classification of Diseases and Related Health Problems – 10<sup>th</sup> Revision. Centre of Health Information Systems; 2008.
2. Pużyński S, Wciórka J. *Klasyfikacja zaburzeń psychicznych i zaburzeń zachowania w ICD-10: opisy kliniczne i wskazówki diagnostyczne*. Krakow: University Medical Publishing House “Vesalius”; 2007.
3. International Classification of Functioning, Disability and Health: ICF. World Health Organization; 2009.
4. GBD 2015 Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 310 diseases and injuries, 1990–2015: A systematic analysis for the Global Burden of Disease Study 2015. *Lancet*. 2016; 388(10053): 1545–1602.
5. Holden BA, Fricke TR, Wilson DA, Jong M, Naidoo KS. et al. *Global prevalence of myopia and high myopia and temporal trends from 2000 through 2050*. *Ophthalmology*. 2016; 123(5): 1036–1042. Doi: 10.1016/j.ophtha.2016.01.006. [Epub 2016 Feb 11].
6. Partyka, O, Wysocki MJ. *Epidemiology of eye diseases and infrastructure of ophthalmology in Poland*. *Przegl. Epidemiol.* 2015; 69(4): 773–777.
7. Soubrane G, Cruess A, Lotery A, Pauleikhoff D, Monès J. et al. *Burden and health care resource utilization in neovascular age-related macular degeneration: Findings of a multicountry study*. *Arch. Ophthalmol.* 2007; 125(9): 1249–1254.
8. Kempen GI, Balleman J, Ranchor AV, Rens van GH, Zijlstra GR. *The impact of low vision on activities of daily living, symptoms of depression, feelings of anxiety and social support in community-living older adults seeking vision rehabilitation services*. *Qual. Life Res.* 2012; 21(8): 1405–1411.
9. Aa van der HP, Rens van GH, Comijs HC, Margrain TH, Gallindo-Garre F. et al. *Stepped care for depression and anxiety in visually impaired older adults: Multicentre randomised controlled trial*. *BMJ*. 2015; 351: h6127.
10. Augustin A, Sahel JA, Bandello F, Dardennes R, Maurel F. et al. *Anxiety and depression prevalence rates in age-related macular degeneration*. *Invest. Ophthalmol. Vis. Sci.* 2007; 48(4): 1498–1503.
11. Aa van der HP, Margrain TH, Rens van GH, Heymans MW, Nispen van RM. *Psychosocial interventions to improve mental health in adults with vision impairment: Systematic review and meta-analysis*. *Ophthalmic Physiol. Opt.* 2016; 36(5): 584–606.
12. Ahn JM, Lee SY, Yoon JS. *Health-related quality of life and emotional status of anophthalmic patients in Korea*. *Am. J. Ophthalmol.* 2010; 149(6): 1005–1011.
13. Yokoi T, Moriyama M, Hayashi K, Shimada N, Tomita M. et al. *Predictive factors for comorbid psychiatric disorders and their impact on vision-related quality of life in patients with high myopia*. *Int. Ophthalmol.* 2014; 34(2): 171–183.
14. Langelaan M, Boer de MR, Nispen van RMA, Wouters B, Moll AC, Rens van GH. *Impact of visual impairment on quality of life: A comparison with quality of life in the general population and with other chronic conditions*. *Ophthalmic Epidemiol.* 2007; 14(3): 119–126.
15. Bailey IL, Hall A. *Visual impairment: An overview*. American Foundation for the Blind; 1990.
16. Ray CT, Horvat M, Williams M, Blasch BB. *Clinical assessment of functional movement in adults with visual impairments*. *J. Visual Impair. Blind.* 2007; 101(2): 108–113.



17. Donoyama N, Munakata T. *Trait anxiety among Japanese massage practitioners with visual impairment: What is required in Japanese rehabilitation education?* British Journal of Visual Impairment. 2009; 27(1): 25–47.
18. Williams RA, Brody BL, Thomas RG, Kaplan RM, Brown SI. *The psychosocial impact of macular degeneration.* Arch. Ophthalmol. 1998; 116(4): 514–520.
19. Kilian M. *Następstwa utraty wzroku w starszym wieku. Człowiek – Niepełnosprawność – Społeczeństwo.* 1995; 2(12) 2010: 89–103.
20. Stelter Ź. *Choroba, niepełnosprawność, cierpienie oraz postawy wobec nich – w teorii i badaniach.* Warsaw: The Maria Grzegorzewska University Press; 2010.
21. Golińska L. *Wpływ doświadczeń trwałego uszczerbku zdrowia na jakość życia.* Polskie Forum Psychologiczne. 2009; 14(1): 5–16.
22. Malec M. *Biograficzne uczenie się osób z nabytym stygmatem.* Wrocław: “Atut” Publishing House; 2008.
23. Sacks O. *Oko umysłu.* Pozna: Zysk i S-ka Publishing House; 2011.
24. Kowalewski L. *Psychologiczna i społeczna sytuacja dzieci niepełnosprawnych.* In: I. Obuchowska, ed. *Dziecko niepełnosprawne w rodzinie.* Warsaw: WSIP; 1999. P. 55–100.
25. Czerwińska K. *Utrata wzroku w kontekście realizacji zadań rozwojowych w okresie dorosłości. Niepełnosprawność.* Dyskursy Pedagogiki Specjalnej. 2015; 17(17): 76–90.
26. White UE, Black AA, Wood JM, Delbaere K. *Fear of falling in vision impairment.* Optom. Vis. Sci. 2015; 92(6): 730–735.
27. Mądry I. *Małżeństwo a akceptacja inwalidztwa.* Szkoła Specjalna. 1988; 5: 331–338.
28. Łuszczynski Cz. *O łagodzeniu skutków kalectwa.* Warsaw: CRZZ Publishing Institute; 1980.
29. Sun W, Wu F, Kong J, Nakahara Y, Xuan D. et al. *Analysis on the psychological factors of glaucoma and the influence of the psychological therapy after the education on the glaucoma club.* Int. Eye Sci. 2012; 12(9): 1619–1622.
30. Teunisse RJ, Cruysberg JR, Hoefnagels WH, Kuin Y, Verbeek AL, Zitman FG. *Social and psychological characteristics of elderly visually handicapped patients with the Charles Bonnet Syndrome.* Comprehensive Psychiatry. 1999; 40(4): 315–319.
31. Zaorska M. *Tyflopedagog wobec problemu aktywności życiowej – zawodowej i prozawodowej osób dorosłych z niepełnosprawnościami wzrokową.* Torun: Educational Publishing House; 2015.
32. Lotery A, Xu X, Zlatava G, Loftus J. *Burden of illness, visual impairment and health resource utilisation of patients with neovascular age-related macular degeneration: Results from the UK cohort of a five-country cross-sectional study.* Br. J. Ophthalmol. 2007; 91(10): 1303–1307.
33. Tastan S, Iyigun E, Bayer A, Acikel C. *Anxiety, depression, and quality of life in Turkish patients with glaucoma.* Psychol. Rep. 2010; 106(2): 343–357.
34. Gutman, C, Jaffe K. *A group intervention for visually impaired grandparents.* Journal of Visual Impairment and Blindness. 2002; 96(10): 741–742.
35. Ueda Y, Tsuda A. *Differential outcomes of skill training, group counselling, and individual cognitive therapy for persons with acquired visual impairment.* Japanese Psychological Research. 2013; 55(3): 229–240.
36. Alma MA, Groothoff JW, Melis-Dankers BJM, Suurmeijer TPBM, Mei van der SF, Mei van der SF. *The effectiveness of a multidisciplinary group rehabilitation program on the psychosocial functioning of elderly people who are visually impaired.* Journal of Visual Impairment and Blindness. 2013; 107(1): 5–16.

37. Kucharczyk I. *Funkcjonowanie emocjonalne dzieci z niepełnosprawnością wzroku*. Niepełnosprawność. Dyskursy Pedagogiki Specjalnej. 2015; 17: 91–102.
38. Gullledge SL, Kline OR. *Use of stereo headphones for patient relaxation during cataract surgery under local anesthesia*. Ophthalmic Surgery, Lasers and Imaging Retina. 1989; 12(4): 289–290.
39. Wiwatwongwana D, Vichitvejpaisal P, Thaikruea L, Klaphajone J, Tantong A, Wiwatwongwana A. *The effect of music with and without binaural beat audio on operative anxiety in patients undergoing cataract surgery: A randomized controlled trial*. Eye (Lond.). 2016; 30(11): 1407–1414.
40. Gioia L, Cabrini L, Gemma M, Fiori R, Fasce F. et al. *Sedative effect of acupuncture during cataract surgery: Prospective randomized double-blind study*. Journal of Cataract and Refractive Surgery. 2006; 32(11): 1951–1954.
41. Kim MS, Cho KS, Woo HM, Kim JH. *Effects of hand massage on anxiety in cataract surgery using local anesthesia*. Journal of Cataract and Refractive Surgery. 2001; 27(6): 884–890.
42. Karaman Özlü Z, Tuğ Ö, Çay Yayla A. *Inevitable problems of older people: Prenursery information effect on anxiety levels in patients undergoing cataract surgery*. J. Clin. Nurs. 2016; 25(9–10): 1388–1394.
43. Saisky Y, Hasid S, Ebert T, Kosov I. *Issues in psychiatric evaluation of children and adolescents with visual impairment*. Harefuah. 2014; 153(2): 109–12, 125.

Address: Katarzyna Weronika Binder  
Medical University of Lodz  
Department of Psychosocial Rehabilitation  
90-674 Łódź, Pl. Hallera Street 1  
e-mail: katarzyna.binder@umed.lodz.pl