

Some Peculiarities of the Link between Visual Impairment Level and Expression of Depression Features

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Abstract

Individuals with visual impairments are at greater risk to have the mind-related health problems. Depression is a rather common mood disorder that might determine affection of our feelings, thoughts and daily activities. It is caused by a combination of genetic, biological, environmental, and psychological factors. The main risk factors include personal or family history of depression; major life changes, trauma or stress; certain physical illnesses and medications. On the whole due to the lack of the studies that aim at better understanding of the visually impaired people in Lithuania, our study on the subject is very topical. The study involved 61 Lithuanian residents experiencing visual impairment of different level. Some of our findings were consistent with the results of other studies, some of our findings contradicted the findings of other researchers. 53% of the visually impaired persons, who participated in our research, were experiencing different level of depression (noted that according to self-reported expression of depression features 13% of cases might be recognized as severe depression), visually impaired men tend to experience more depression features than visually impaired women. Some factors might reduce risk of experiencing depression features - younger age, having child, employment or training, physical and /or leisure activities, higher level of income, involvement in the social life of the community of persons with disabilities.

Keywords: cognitive, somatic and social factors of depression; level of disability of visually impaired person, person's well-being.

Introduction

Depression is one of the most disabling diseases, and causes a significant burden both to the individual and to society. In the EU at least 21 million persons were affected by depression (Sobocki et al., 2006). Moreover, depression the costliest brain disorder in Europe, accounting for 33% of the total cost. According to WHO projections, in 2030 depression will be the single most important cause of burden of illness in the EU. The cost of depression corresponds to 1% of the total economy of Europe (GDP). The impact of major depressive disorder on quality of life and working ability is comparable to severe physical illness (documents for the EU thematic conference on preventing depression and suicide, 2009).

A number of socio-demographic correlates of major depression are found consistently across countries, and cross-national data also document associations with numerous adverse outcomes, including difficulties in role transitions (e.g., low education, high teen childbearing, marital disruption, unstable employment), reduced role functioning (e.g., low marital quality, low work performance, low earnings), elevated risk of onset, persistence and severity of a wide range of secondary disorders, and increased risk of early mortality due to physical disorders and suicide (Kessler & Bromet, 2013). It has been suggested that depression is to some extent an illness of affluence. A related argument is that income inequality, which is for the most part greater in high than low-middle income countries, promotes a wide variety of chronic conditions that includes depression.

Disability is known to be a risk factor for depression. Individuals with visual impairments are at greater risk to have the mind-related health problems. The aim of the study was to assess the spread of depressiveness among the visually impaired persons and to examine bio-psychosocial factors. On the whole due to the lack of the studies that aim at better understanding of the visually impaired people in Lithuania, our study on the subject is very topical.

The following research questions were posed:

- Do the higher level of disability of visually impaired person correlates with more severe depression?
- How do different aspects of visually impaired person's well-being correlate with depressiveness?

Methods

The possible cases of depression were identified using The Beck Depression Inventory (BDI) combined with a questionnaire on personal socio-demographic and economic situation. The research was carried out in 2017. 61 visually impaired persons from Kaunas County (Lithuania) were involved in the research. All respondents had no experience with depression treatment (neither psychopharmacology, nor psychotherapy). While filling in the anonymous questionnaire (converted to Braille for persons with legal blindness) they ranked BDI items and indicated relevant psychosocial peculiarities (age, gender, level of disability, family and employment situation, level of education, social and physical activity, income per family member, etc.).

Table 1. Socio-demographic data of 61 respondents

Level of disability	Limited visual impairment - 25 persons	Low vision - 29 persons	Legal blindness - 7 persons
Age group	19-35 years - 26	36-50 years - 18	51-65 years - 17
Gender	Female - 34		Male - 27
Level of education	Secondary - 29	VET - 16	Higher - 16
Employment/studies	Employed - 29	Unemployed - 18	Student - 14
Social activities	Rare - 48		At every turn - 13
Monthly income per person/euro	Less than 200 – 29	200-300 – 17	More than 300 – 16
Physical activity	Not active - 33	Sometimes - 5	1-2 times per week - 23
Family situation	Couple without kids - 18	Couple with kids - 22	Single without kids - 17 Single with kids - 4

The Beck Depression Inventory has proven rates of validity and reliability (Ayuso-Mateos et al., 2001; Steer et al., 2000; Deksnytė et al., 2012, Jurkevičiūtė, 2013). BDI is a 21-item, self-report rating inventory that measures characteristic attitudes and symptoms of depression. The items are scored from 0 to 3 and measure mood, pessimism, sense of failure, lack of satisfaction, guilty feelings, sense of punishment, self-hate, self-accusations, self-punitive wishes, crying spells, irritability, social withdrawal, indecisiveness, body image, work inhibition, sleep disturbance, fatigability, loss of appetite, weight loss, somatic preoccupation, and loss of libido. BDI score scale is from 0 to 63. Scores of 14-19 indicate mild depression, 20-28 indicate moderate depression, and greater than 29 indicate severe depression. 8 items of BDI (2; 3; 5-9; 14) fall within *Cognitive factor* and 13 items of BDI (1; 4; 10-13; 15-23) fall within *Somatic factor*. The results obtained were regarded as statistically significant with the probability of error at 5% ($p < .05$). Calculations were performed using SPSS 19.0 (*Statistical Package of Social Sciences*) software.

Results

Limited visual impairment was noted in 41% of cases, low vision in 47.5% and legal blindness in 11.5%. According to self-reported expression of depression features 53% of visually impaired persons were experiencing different level of depression (e.g. according Bi et al., 2020, the incidence rate of depressive symptoms in the disabled people in China was 39.9%). Noted that 13% of cases might be recognized as severe depression (Bi et al., 2020, indicate 1%). No reliable difference was detected between BDI scores for low vision and limited visual impairment, but BDI scores for blind persons are significantly lower (15.7 ± 4.2 & 15.2 ± 4.6 ; 8.0 ± 2.6 ; $\chi^2 = 0.48$, $p > .05$; $\chi^2_2 = 18.3$, $p < .001$).

Analysis of cognitive and somatic factors data for „no depression“ and „mild level of depression“ cases indicated that there are no reliable differences of scores. However, in average and severe depression cases the prevalence of somatic factor was discovered (average BDI scores for cognitive and somatic factors- no depression cases - 1.7 ± 1.6 & 4.5 ± 1.9 ; in mild depression cases - 5.7 ± 2.6 & 10.5 ± 3.5 ; average - 10.6 ± 3.8 & 16.6 ± 3.9 ; severe - 9.6 ± 5.2 & 16.1 ± 3.7 ; $\chi^2_8 = 6.71$, $p < .01$).

Our results indicate the associations between age group and BDI scores ($r = 0.75$; $p < .001$). Respondents in the oldest age group (51+) were 1.5 times as likely to have higher BDI scores

as those in youngest age group ($\chi^2_2 = 39.0$, $p < .001$). The 36–50 years age group was also at increased risk depression as this group had the highest share of persons with severe level of depression (17%).

Single persons with or without kids had a significantly lower risk of depression than couples with or without kids (average BDI scores for single persons 9.8 ± 2.3 ; single parents 8.2 ± 2.5 , couples without kids 20.5 ± 3.9 ; couples with kids 14.6 ± 2.7 , ($\chi^2_{15} = 7.1$, $p < .000$). Noted that single parents had no depression cases (neither mild, average nor severe level) while all other groups had it - 44.4% of single respondents without kids (mild-33.3%, average-0%, severe level- 11.1% percent), 63.6% of couples with kids (mild-27.2%, average-18.2%, severe level- 18.2%), 66.7% of couples without kids (mild-11.1%, average-38.9%, severe level- 16.7%).

Visually impaired women had a significantly lower risk of depression than man (average BDI score accordingly 12.5 ± 3.7 and 17.3 ± 4.9). According self-reporting 57% of men and 48% of women have different level of depression (mild level 18% of men and 24% of women, average - 25% of men and 12% of women, severe level of depression 14% of men and 12% of women) ($\chi^2_5 = 9.6$, $p < .01$).

Education level of visually impaired persons was rather high - 45 of them have secondary or vocational education, 16 – graduated from higher education institutions. Respondents with secondary education had the lowest BDI scores, those with VET- the highest (25% and 31% of VET graduates have accordingly average or severe level of depression). ($\chi^2_5 = 8.1$, $p < .01$). Noted that those who were at training or education at the moment of participation in our research had a significantly lower risk of depression than employed or unemployed persons. 70% of respondents in education had no depression features and there were no cases of severe or average depression in this group. Average BDI scores for persons in education, employment or unemployment accordingly 9.1 ± 2.5 ; 15.4 ± 3.9 ; 17.1 ± 4.6 ($\chi^2_{12} = 7.1$, $p < .000$).

Economic factor (monthly income per person in the household) correlates with depression level - respondents with low-income level had a significantly higher scores of BDI than those living in households with income 200-300 euro or ≥ 301 euro per person per month (17.9 ± 3.2 ; 13.7 ± 1.9 ; 13.4 ± 4.6). Severe depression was noted for 21% of visually impaired persons with income ≤ 200 euro per person in the household against 11% and 12% for those with monthly income level 200-300 or ≥ 301 euro. Average depression level was noted accordingly for 26%; 18% and 17% of respondents ($\chi^2_{12} = 12.4$, $p < .000$).

Socially active life and physical activity reduced significantly the risk of depression for the respondents. Those visually impaired persons who participate regularly in social activities of disabled organizations or those who are physically active had lower average BDI scores (8.4 ± 1.9 and 10.8 ± 1.7 against 13.5 ± 2.1 and 17.7 ± 2.6). Severe depression was noted for 8.3% and 17.6% of socially or physically not active respondents against 0 cases and 7.4 percent for those who took part in social life or physical activity regularly.

Discussion

In Lithuania share of people with possible depression features seem to be higher than average level of the EU. Somatic factor of depression prevails against cognitive factor in average and severe depression cases.

Some authors (Chou & Chi, 2004; Adomaitienė et al., 2008, Davidonienė et al., 2012, Milaneschi & Penninx, 2014, Barboza et al., 2020) presented results, that depression level

might be affected by the level of disability. Our research results contradict this statement – our finding is that depressive mood and animosity are more common among visually impaired but not blind disabled.

The relationship between gender and disability is the debate due to the fact that some studies found little or no gender difference, other studies found clear gender differences (Kušleikaitė et al., 2007, EU thematic conference on preventing depression and suicide, 2009, Davidonienė et al., 2012, Hegerl et al., 2013). Majority of these studies agree that depression is unevenly distributed in the population, affecting women more often, being a major contributor to gender and health inequalities in the EU. Our results contradict researchers' findings that women are more at risk for depression and support Dietrich S. et al., 2014 research results as in our research group men are more at risk of depression than women. We explain this due to fact that studies mentioned above were based on the results not visually impaired respondents. The lack of clarity might be associated with studies design (e.g. sample size and measures of depression) and cultural characteristics. More research should be done to provide more evidence for one or another statement.

The results of our research indicate strong positive correlation between age and depression – elderly persons are at higher risk of depression. Other authors got similar results (Davidonienė et al., 2012, Barboza et al., 2020) – depression for geriatric patients deepens somatic symptoms, reduces well-being and self-service (Background document for the Thematic Conference on Prevention of Depression and Suicide, 2009).

Different authors present contradictory findings on correlation of depressiveness and family situation. Some researchers (Skučas, 2013) have evidence that married or living in partnership respondents are at greater depression risk than single ones. They provide explanation that various family disagreements might be assessed as negative influencing factor. However, some researchers (Davidonienė, Stavislovienė&Utkuvienė, 2012) provide opposite evidence. Our results support first statements as BDI scores for single visually impaired persons (with or without children) are lower compared to those living with partners or being married. We predict that being the only one adult person in the family gives more personal responsibility for taking care of the own environment and, especially, taking care for children, thus facilitating need persistent character.

Bjelland et al., 2008 argue that low education level strongly correlates with depression and equated high levels of education to protectives, that is accumulating through the whole life. Our results are not so comparable with other authors data, as all our respondents had secondary education, part of respondents graduated from professional or higher education. In our research the highest BDI scores detected in the VET group. We think that general secondary or even higher education without concrete profession might be that protection mentioned above, nevertheless being excluded from professional environment and having no possibility of self-realization in the profession that person got training – that might be real negatively influencing factor for disabled person. We think that further research on education peculiarities should focus on finding out the reasons of visual impairment of respondents- if one already was perceived as competent professional, sudden unexpected disability, might be powerful facilitating factor for depression.

It has been confirmed that people without housing and work are more likely to get sick depression (European Commission Congress on Depression and Suicide Prevention, 2009). Common research findings state that financial dependency is one of the reasons of depression (Davidonienė et al., 2012; Mikutavičienė & Guščinskienė, 2012). Our research supports that

evidence as well – BDI scores of visually impaired respondents, who live in the household with low monthly income level per person, are significantly higher. This group (income per month below 200 euro) has the highest share of persons with severe and moderate depression. People suffer when they are loped off from the social relations (Deci, Ryan, 2000). The results of our research also indicate that socially and physically active visually impaired persons are at reduced risk for depression.

Limitations

We should recognize some potential limitations in our study. The sample size can be considered insufficient (only one county presented while we have 10 counties in our country), however, our main objective was not to conduct a population-based study. Moreover, comparison of findings sometimes is inappropriate due to the fact that number of researches with blind and visually impaired persons are extremely limited. Future studies focusing on population from other counties of Lithuania are needed. Also including of some additional questions about the cause of disability should provide more clarity on findings.

Conclusions

Concerning the first research question that was posed (do the higher level of disability of visually impaired person correlates with more severe depression) our study results indicated no correlation as depressive mood and animosity are more common among visually impaired respondents but not blind disabled. As well our study indicated that visually impaired women are less at risk of depression compared to men. We found that risk of depression increased for disabled from low-income households, for elderly, for a visually impaired person who is married or has a partner, for person with VET training level, not active socially or physically persons.

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