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SELF-IMAGE AND BODY IMAGE CHARACTERISTICS IN BLIND PEOPLE: AN EMPIRICAL STUDY

Abstract

The purpose of this paper is to present the results of my research which explores self-image and body image characteristics in congenitally blind adults ($n = 30$). Questionnaire results from the blind subjects were compared with the results of the sighted control group ($n = 30$). An empirical analysis was based on cognitive-behavioral approach by Thomas Cash and Thomas Pruzinsky. Issues regarding experience of the body in cognitive, emotional and behavioural terms were analysed in the context of personality traits and their impact on body image in blind people. Influence of demographic factors on blind people's body image was also taken into consideration.

Keywords: self image, body image, blind people

Charakterystyka obrazu siebie i własnej cielesności u osób niewidomych: studium empiryczne
Streszczenie

W artykule relacjonującym wyniki badań własnych zawarto charakterystykę obrazu siebie i własnej cielesności dorosłych osób niewidomych od urodzenia ($n = 30$), zestawiając uzyskane przez tę grupę wyniki badań kwestionariuszowych z rezultatami osób widzących (grupa kontrolna $n = 30$). Analizy empiryczne oparto na poznawczej teorii obrazu ciała Thomasa Casha i Thomasa Pruzinsky'ego. Kwestie związane z doświadczaniem cielesności w zakresie poznawczych, emocjonalnych i behawioralnych wymiarów funkcjonowania analizowano w aspekcie wpływu struktury osobowości na obraz ciała niewidomych. Uwzględniono również rolę czynników demograficznych w kształtowaniu tego obrazu.

Słowa kluczowe: obraz siebie, obraz własnego ciała, niewidomi

Introduction

The concept of *resilience* in psychology is defined as an individual's ability to successfully and creatively adapt to adverse conditions as well as the ability to retain positive emotionality and flexible emotional responsiveness. This concept is extremely useful in a non-prescriptive way and it enriches psychological characteristics of an individual and his development; it also offers a valuable contribution to the dynamics of demographically and psychologically diverse social groups (Tedeschi, Calhoun, 2004; Ogińska-Bulik, 2016). The concept of diversity encompasses inclusion of individuals who until recently have been described as different from other individuals in terms of physical or sensory impairment (e.g. blind people), or in terms of social or cultural differences. Resilience involves the ability to balance positive and negative emotions, it enables one to cope with difficult situations and to fully develop in spite of adversities. It acts as a safeguard against symptoms of mental disorders and alleviates somatic symptoms (Juczyński, Ogińska-Bulik 2012; Ogińska-Bulik, 2014; Ostrowski, 2014). The question of mechanisms and processes which prevent disabled people from experiencing mental disorders or invalidation is more or less directly related to broadly understood issue of mental toughness (Sikorska, 2014; Ogińska-Bulik, 2015; Gerc, 2014; Gerc, Jurek, 2015; Gerc, Kuźniar, 2015).

WHO (2014) states that around 285 million people worldwide suffer from visual disability, 39 million of which are blind people, the remaining 264 million are visually impaired (about 90 % of that population lives in poor conditions). The issue of visual disability seems to be a significant one in terms of how communities function and how preventive measures and treatments can be administered. Loss of vision or damage to eyesight impacts an individual's development (Łukasiak, 2015). First of all, when we view development in mechanistic perspective (as influence of external factors on factors that are susceptible to change) where a change in behaviour or in quality of life is interpreted as "induced" by an external factor: damage or loss.

Secondly, when we view development from organismic perspective, a change occurs in the form or structure of a system, i.e. the body. Within this approach observable changes in psychological processes and structures are studied. Stages of developmental change include certain dimensions of human experience. The first dimension is behavioural and it is explained in a descriptive way. Other dimensions are cognitive, social and personal and the ongoing changes are explained by means of relevant theoretical constructs, definitions and concepts within these dimensions.

In blind and visually impaired people certain biological factors (defect or damage) or socio-cultural factors (disability, labelling, etc.) impact developmental changes. In psychology, which is an empirical science, these factors are treated as independent variables which can cause, retain or inhibit developmental changes (Brzezińska, Trempała, 2007, pp. 245–246). This seems to be especially relevant

to how blind people perceive their corporeality and their body image. In this paper experience of one's own corporeality is adopted as a context for human functioning where changes in an individual's development are caused by congenital visual disability. This was done according to an assumption that visual impairment or loss of vision restricts the capacity to receive and correctly interpret (factually and timewise) stimuli providing information not only about oneself (like physical features or physical capabilities) but also about potential risks to health and safety (Konarska, 2012, p. 48).

M. Kalbarczyk, a blind person himself, wrote in his work co-edited with J. Mirowski:

> Individuals blind from birth can experience difficulty comprehending and imagining concepts describing properties of certain objects and phenomena (...). Images of concepts like colour, chiaroscuro, transparence, shine, mist, soap bubble, or rainbow are not equivalent to the images seen by sighted individuals. In individuals blind from birth mental reconstruction of concepts communicated verbally leads to the creation of so-called substitute images, which function as mental substitutes for visual content that is partly or completely inaccessible but which play an important role in accurate conceptualisation in blind individuals (Kalbarczyk, Mirowski, 2015, pp. 80–81).

The issue of corporeality has been present since the very beginnings of psychology and has been mentioned in various contexts, among other things as part of identity construction (Tesser, Felson, Suls, 2004), as a source of mental experience, and as a source creating so-called "I-self," i.e. self-as-knower (Kowalik, 2007), which provides the basis for analysis and assessment of oneself. The "Me-self," i.e. self-as-known/as object of knowledge, is that part of identity which is assessed by the "I-self," meaning that a person observes himself, his traits and distinct ways of reacting as well as feels certain emotions related to these observations. On the basis of observations concerning the "Me-self" a person makes choices and decisions concerning his life and predicts his behaviour (Izydorczyk, 2015).

The concept of personal identity is especially relevant in this paper as it is part of one's identity that is described in the literature as a construct perceptible by the subject himself, from personal perspective.

The research presented in this paper is based on cognitive-behavioural approach developed by T.F. Cash (2002; 2011). He distinguishes three dimensions of body image: cognitive, affective and behavioural. Cognitive dimension refers to thoughts and notions about one's body and it includes selective reception of information related to one's body. Emotional dimension is defined as emotional attitude to one's body, especially to one's appearance. Behavioural dimension refers to attitude towards the body and its parts.

Cash also distinguishes other factors determining body image. According to the scholar, there are two types of factors crucial to understanding body image:

historical and developmental influences. They encompass cultural content related to the feminine beauty ideal or male beauty standards, social contact and its impact on perceiving one's corporeality, physiological aspects of body functioning, as well as appearance, personality and individual psychological traits (cf. Brytek-Matera, 2008; Ashikali, Dittmar, 2010). According to Cash's cognitive-behavioural model, body image in blind people consists of the same elements as body image in sighted people.

Kaplan-Myrth (2000) conducted a series of interviews with blind individuals and stated significant influence of knowledge about one's corporeality on one's body image. Verbal descriptions coming from social environment are essential for blind people for creating mental images of their bodies. They act as a substitute for visual observation, which in the case of sighted people provides necessary knowledge about one's physicality (Kaplan-Myrth, 2000). Substitute images, which are created on the basis of tactile perception, verbal descriptions and creativity, enable blind people to arrange a framework of concepts used in society (Kaplan-Myrth, 2000; Gerc, 2011; Snyder, 2014). Research conducted by Kaplan-Myrth (2000) demonstrates that congenitally blind people and sighted people concentrate on their body image and visual aspects of themselves in a similar way.

Emotional aspect of body image in blind people concerns emotions related to the body and its parts. This aspect is created on the basis of social comparison and beauty ideals present in society. Kaplan-Myrth notes that both blind and sighted girls have similar emotional problems related to body image (2000).

An important facet of emotionality of congenitally blind people (in relation to self-image and body image) and disabled people in general is adapting to the situation they find themselves in (Wilson, 2006). Individuals who do not compare themselves to others in the context of their disability experience more positive emotions related to body image and demonstrate more satisfaction from bodily experience. Research conducted by Baker, Sivyer and Towell (1998) suggests that despite impact of beauty ideals on blind people, these ideals do not impact their everyday lives greatly. Whereas sighted people, who have daily contact with mass media, seem to be more susceptible to aforementioned beauty ideals. In conclusion, blind people are less likely to evaluate their bodies or to compare their appearance to other people's (Baker, Sivyer, Towell, 1998).

Body image in blind people is constructed on the basis of verbal messages coming from the environment, messages referring to beauty ideals and beauty standards as well as on the basis of perception of one's corporeality, which occurs in a sequential manner. However, according to research quoted above, blind people are more immune to emotional consequences resulting from not fitting the beauty standards promoted in the media. Blind people show higher self-esteem and are less likely to experience body dissatisfaction or depressive disorders.

Method

Problems and hypotheses

The aim of my research is body image characteristics in blind people as well as identifying potential correlations between intrapsychological as well as demographic variables and body image in blind people. I compared the results obtained in my research with sighted people characteristics.

The following questions were formulated in the context of the issues examined in this study:

1. Are blind people different from sighted people in terms of body investment?
2. Does blind people's body image differ from sighted people's body image?
3. Do blind people and sighted people differ in terms of personality traits and construction of body image?
4. What type of internal factors in blind people influence the formation of body image?

On the basis of these questions the following research hypotheses were formulated:

Hypothesis 1: Body investment in blind people differs from body investment in sighted people.

Hypothesis 1.1: Negative feelings and attitudes related to body image are more frequent in blind people than in sighted people.

Hypothesis 1.2: Blind people display higher level of comfort in physical contact with other people than sighted people.

Hypothesis 1.3: Blind people display lower level of bodily self-care and bodily self-protection than sighted people.

Hypothesis 1.4: Blind people's capabilities for bodily self-protection differ from sighted people's capabilities for self-protection.

Hypothesis 2: There is a correlation between body image and blindness.

Hypothesis 2.1: Blind people are less likely to internalize contemporary beauty ideals.

Hypothesis 2.2: Blind people receive considerably fewer messages regarding their appearance from the environment than sighted people.

Hypothesis 2.3: Level of physical activity in blind people differs from level of physical activity in sighted people.

Hypothesis 2.4: Cognitive-emotional dimension of body image in blind people is different from cognitive-emotional dimension of body image in sighted people.

Hypothesis 3: Congenitally blind people and sighted people are different with regard to personality traits.

Hypothesis 3.1: Levels of extraversion and neuroticism are higher in blind people than in sighted people.

Hypothesis 3.2: There is a negative correlation between openness to experience and blindness.

Hypothesis 3.3: Blind people display higher levels of agreeableness than sighted people.

Hypothesis 3.4: Blind people display lower levels of conscientiousness than sighted people.

Hypothesis 4: Personality variables and demographic variables determine body image in blind people.

Hypothesis 4.1: Body image in blind people is determined by intrapsychological variables.

Hypothesis 4.2: Body image in blind people is influenced by demographic factors (age, sex).

Hypothesis 4.3: Body image in blind people is influenced by body investment displayed by them.

The research is based on Thomas F. Cash and Thomas Pruzinsky model, according to which body image is a mental construction representing individual cognitive, emotional and behavioural experience related to one's physical appearance. According to this model body image is a multidimensional concept.

The following research tools were used to characterise body image:

1. **The Body Investment Scale (BIS)**, by I. Orbach and M. Mikulincer (1998), which is a tool consisting of twenty-four items (statements), each including four subscales:
   - feelings and attitudes towards the body;
   - comfort in touch, especially related to physical contact with other people;
   - body care;
   - body protection;

   The respondents were supposed to respond to each of the items using a five-point scale (from "I do not agree at all" to "I strongly agree"). Low results mean low level of body investment.
2. **KWCO Body Image Questionnaire** by A. Głębocka (2009), which was based on the research concerning body image in overweight and obese people but that is perfectly applicable to any other type of respondent. The questionnaire consists of four subscales and the respondent has to answer questions using five-point scale. It examines the following dimensions:
   - Cognition-emotions (16 items; high score means dissatisfaction with one's body) – this dimension examines respondent's opinion about his appearance and social influence in shaping that opinion.
   - Behaviour (5 items; high score means that respondent engages in behaviours minimizing negative feelings towards his body) – this dimension also refers to engaging in activities related to self-care.

- Social criticism (6 items; high score means subjective sense of criticism and lack of body confidence) – this dimension describes respondent's personal judgements related to social acceptance.
- Ugly-pretty stereotype (13 items; high score means negative interpretation of lack of physical attractiveness in the context of respondent's social functioning) – this dimension examines degree of internalization of beauty standards in modern culture.

3. A widely known **NEO-FFI Inventory (the NEO Five-Factor Inventory)** created by P. Costa and R. McCrae in 1978 (Zawadzki et al., 1998).

The study proper, preceded by the pilot study, was conducted between October 2014 and June 2015. Purposive sampling method was used (confirmed congenital blindness). The study was carried out individually, in one sitting, with participants' consent, by means of questionnaires completed online. Research sample (difficult access population) consisted of 30 people ranging in age from 18 to 33 (mean age: $M = 21.21$, standard deviation: $SD = 3.37$), who were blind from birth. The control group, serving as a comparison group for the results, consisted of 30 sighted people ranging in age from 18 to 32 (mean age: $M = 23.9$), standard deviation: $SD = 3.81$). All the subjects were given the same instructions with regard to completing the questionnaires. They were informed about the anonymous nature of the study. Questionnaires were filled out online to ensure that the conditions were as similar as possible for both groups.

Methods for statistical data analysis

Variables enabling verification of research hypotheses were distinguished during the research. These variables, often referred to as individual characteristics, as a rule take different values. Table 1 presents chosen variables and their operationalisation.

Verification of proposed hypotheses

Within the scope of each research question certain hypotheses concerning self-image and body image in blind people were distinguished. Proposed research hypotheses were operationalised and then submitted to statistical verification using Statistica 10 PL software.

After the analysis of the results, verification of first hypothesis was possible and research question: Does blind people's body image differ from sighted people's body image? has been resolved. Using statistical inference, level of statistical significance was established as $\alpha = 0.05$. Also, *Student's t-test* was used for independent samples.

Table 2 presents a comparison of differences between sighted people and blind people in the context of Body Investment Scale results.

Verification of Hypothesis 1, seen in Table 1, revealed no significant differences between blind and sighted people in the context of: body investment

Table 1. Characteristics of variables chosen for the purpose of this study

Variable	Operationalised variable
Body investment	Raw (general) score for Body Investment Scale by I. Orbach and M. Mikulincer
Body feelings and attitudes	Raw score for subscale F for Body Investment Scale
Comfort in touch	Raw score for subscale T of Body Investment Scale
Body care	Raw score for subscale C of Body Investment Scale
Body protection	Raw score for subscale P of Body Investment Scale
Body image	Raw score (expressed in points), relating to the overall result of KWCO Body Image Questionnaire (Głębocka, 2009)
Ugly-pretty stereotype	Raw score for subscale *ugly-pretty stereotype* of KWCO
Social criticism	Raw score for subscale *social criticism* of KWCO
Behaviour	Raw score for subscale *behaviour* of KWCO
Cognition-emotion	Raw score for subscale *cognition-emotion* of KWCO
Neuroticism	Raw score for subscale *neuroticism* of NEO-FFI
Extraversion	Raw score for subscale *extraversion* of NEO-FFI
Openness to experience	Raw score for subscale *openness to experience* of NEO-FFI
Agreeableness	Raw score for subscale *agreeableness* of NEO-FFI
Conscientiousness	Raw score for subscale *conscientiousness* of NEO-FFI

Source: own work.

Table 2. Differences between sighted and blind people in the context of Body Investment Scale results ($n = 60$)

Variable	*Mean value* Study group	*Mean value* Control group	*t*	*p*	*SD beta*	*SD k*	*Quotient F Variances*	*p Variances*
Body investment	67.800	64.600	1.637	0.107	8.368	6.678	1.571	0.230
Feelings and attitudes	11.766	10.033	1.904	0.061	3.431	3.615	1.111	0.780
Comfort	17.533	16.233	1.639	0.106	3.549	2.501	2.015	0.064
Body care	20.633	21.566	−1.567	0.122	2.355	2.254	1.092	0.813
Body protection	17.866	16.766	1.370	0.175	3.192	3.024	1.113	0.774

Source: own work.

($t = 1.64$; $df = 58$; $p > 0.05$), negative feelings and attitudes concerning body image ($t = 1.90$; $df = 58$; $p > 0.05$), comfort in touch ($t = 1.64$; $df = 58$; $p > 0.05$), body care ($t = 1.57$; $df = 58$; $p > 0.05$) and body protection capability ($t = 1.37$; $df = 58$; $p > 0.05$). Hypothesis 1 and specific hypotheses resulting from the main hypothesis were not confirmed.

Table 3 presents differences in results of KWCO Body Image Questionnaire between blind and sighted people.

Table 3. Differences in results of KWCO Body Image Questionnaire between blind and sighted people

Variable	*Mean value* Study group	*Mean value* Control group	*t*	*p*	*SD beta*	*SD* k	*Quotient F Variances*	*p Variances*
Body image	249.967	261.200	− 1.941	0.057	26.205	17.829	2.161	0.042
Stereotype	**23.900**	**28.500**	**− 3.354**	**0.001**	**5.803**	**4.769**	**1.481**	**0.296**
Criticism	15.200	14.933	0.4237	0.673	2.696	2.149	1.575	0.227
Behaviour	**15.900**	**11.167**	**4.832**	**0.000**	**4.180**	**3.364**	**1.544**	**0.248**
CogEm	35.800	37.867	− 0.936	0.352	9.586	7.366	1.694	0.162

Source: own work.

Verification of specific hypothesis related to overall results of KWCO Body Image Questionnaire revealed no significant differences between the subjects in both groups ($t = 1.94$; $df = 58$; $p > 0.05$). This means there is no correlation between body image and blindness. However, other statistically significant differences between blind and sighted people ($t = 3.35$; $df = 58$; $p > 0.05$) concerning internalization of beauty standards were confirmed, e.g blind people internalize beauty standards to a lesser extent than sighted people. No significant differences between blind and sighted people were revealed concerning number of messages from social environment related to person's physical appearance ($t = 0.42$; $df = 58$; $p > 0.05$). It was confirmed that blind people differ from sighted people with respect to physical activity ($t = 4.83$; $df = 58$; $p > 0.05$), i.e. blind people engage in more types of physical activity.

The results of the analysis also indicate that cognitive-emotional dimension of body image in blind people does not differ from the same dimension in sighted people ($t = 0.94$; $df = 58$; $p > 0.05$).

Comparison of the two groups on the basis of the results of NEO-FFI inventory allowed to answer the following research question: Do blind and sighted people differ in terms of personality traits and body image? The level of significance was set at $\alpha = 0.05$. Student's t-test (independent sample test) was also used.

Table 4 presents differences between blind and sighted people regarding their personality traits.

The analysis indicated that blind people do not differ from sighted people in terms of: neuroticism ($t = 1.95$; $df = 58$; $p > 0.05$), agreeableness ($t = 1.42$; $df = 58$; $p > 0.05$), and conscientiousness ($t = 0.09$; $df = 58$; $p > 0.05$).

According to Hypothesis 3.2 significant differences were confirmed between blind and sighted people in terms of openness to experience ($t = 4.40$; $df = 58$; $p > 0.05$), which means that blind people are less open to experience than sighted people. The obtained results also indicate that blind people show lower levels of extraversion than sighted people ($t = –2.68$; $df = 58$; $p > 0.05$).

Table 4. Differences between blind and sighted people regarding their personality traits ($n = 60$)

Variable	*Mean value* Study group	*Mean value* Control group	*t*	*p*	*SD beta*	*SD k*	*Quotient F Variances*	*p Variances*
NEU	30.93	27.07	1.9495	0.561	6.269	8.8743	2.003	0.066
OPEN	**37.17**	**43.66**	**−4.395**	**0.00005**	**5.0452**	**6.337**	**1.578**	**0.225**
AGREE	45.40	43.10	1.417	0.162	5.952	6.604	1.231	0.579
CONSC	43.90	43.77	0.085	0.932	5.956	6.185	1.078	0.840
EXTRA	**40.73**	**44.97**	**−2.68**	**0.009**	**4.849**	**7.155**	**2.178**	**0.040**

Source: own work.

After analysing the results obtained in all three questionnaires, an attempt was made to answer the fourth research question: What type of variables influence blind people's body image? Table 5 shows analysis of multivariable regression.

Table 5. Regression model of the relationship between dependent variable and *body image* variable as well as other variables identified in the study

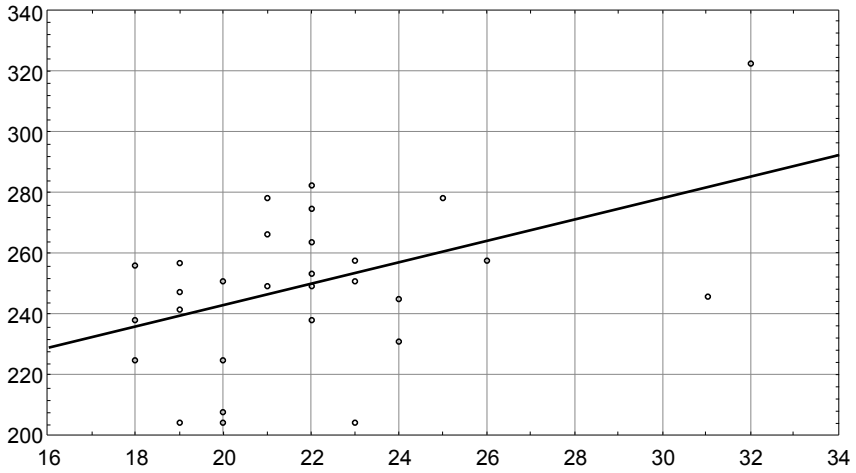
$n = 30$	Regression summary of dependent variable: Body Image (research data) $R = 0.69202195$ $R^2 = 0.47889437$ Adjusted $R^2 = 0.37033070$ $F(5,24) = 4.4112$ $p < 0.00545$ Standard Error: 20.794				
	BETA	*SE of BETA*	*B*	*SE of B*	*t*(24)
Absolute term			**308.5661**	**67.48029**	**4.57268**
OPEN	0.350405	0.214774	1.8200	1.11556	1.63151
NEU	**0.359570**	**0.171784**	**1.5030**	**0.71804**	**2.09315**
AGREE	−0.286034	0.167073	−1.2594	0.73564	−1.71203
EXTRA	−0.423189	0.217145	−2.2870	1.17352	−1.94887
CONSC	−0.115959	0.162146	−0.5102	0.71343	−0.71515

Source: own work.

Analysis of multiple regression showed relative contribution of explanatory variables (intrapsychological variables – results of NEO-FFI inventory) in explaining the dependent variable (*Body Image* measured by Głębocka's KWCO questionnaire). The results indicate that only *neuroticism* variable is statistically significant. This variable's regression coefficient is positive, which means that the higher levels of neuroticism a person displays, the more negative body image he or she has.

Scatter diagram for *body image* and *age* variables (Figure 1) shows possible existence of statistically significant correlation in blind people. On the basis of correlation matrix analysis (seen in Table 6) a correlation between demographic variables (age, sex) and body image can be identified.

Figure 1. Scatter diagram for *body image* variable against *age* variable in blind people (n = 30)



Blind individuals
Scatter diagram: Body Image vs. Age
Research data 193v * 60c
Exclusion condition: NOT ("Group" = 2)
Body Image = 172.3299 + 3.5451 * x
Y axis – Body Image
X axis – Age

Source: own work.

Table 6. Correlation matrix (coefficient r value) for *body imag*e variable

Variable	Blind people Correlation (research data) marked correlation coefficients are significant at $p > 0.05$	
Body image	Age **0.449866**	Sex –0.055958

Source: own work.

Analysis of correlation matrix indicated significance of correlation coefficient (r = 0.45; p > 0.05) between demographic variable *age* and *body image* which means, by logical extension, that body image is influenced by age of a person.

Correlation analysis (Table 7) conducted in a similar way did not show any relationship between body investment in blind people and their body image: the correlation is not statistically significant (r = 0.155188; p > 0.05). This means that body investment in blind people does not influence their body image.

Table 7. Correlation matrix (coefficient r value) between *body investment* and *body image* in blind people

Variable	Correlations (research data) Marked correlation coefficients are significant at $p > 0.05000$ $n = 60$ (gaps in data closed randomly)			
	Mean value	*SD*	Body Investment	Body Image
Body investment	66.2000	7.67739	1.000000	−0.155188
Body image	255.5833	22.93195	−0.155188	1.000000

Source: own work.

Discussion and interpretation of the results

Statistical analysis of the results of two compared groups, i.e. congenitally blind people and non-disabled people shows that blind people do not differ from sighted people in terms of negative emotions concerning their bodies. Blind people do not feel resentment or anger towards their bodies. It is also worth noting that despite tactile and sequential exploration of their surroundings and of other people's physical appearance (e.g. through touching someone's face), blind people do not show higher degree of comfort in touch. Physical distance and physical boundaries are comparable in blind and sighted people, despite different experiences. Body care as well as body protection is also very similar in blind and sighted people. Differences in life experience do not result in different tendencies regarding body image. The literature does not present a lot of data related to blind people, therefore it would make sense to conduct more extensive research including people from different backgrounds and compare them with the results presented in this paper.

Verification of research hypotheses did not establish a correlation between body image and blindness. However, differences between blind and sighted people were established regarding bodily activities. It turns out that despite lack of vision and feedback on results of one's own activities, blind people engage more in grooming activities and in activities related to developing the body. Blind people also do not internalize contemporary beauty standards as much as sighted people, despite receiving similar number of critical messages from the environment and despite similarities in cognitive-emotional dimension regarding their bodies. These results are inconsistent with the study conducted by Kaplan-Myrth (2000), which demonstrates that beauty standards play an important role in blind people's lives. This inconsistency might be related to properties of research tools. Kaplan-Myrth interviewed blind people whereas this study was based on questionnaires. Moreover, internalization of beauty standards is related to cultural factors. Kaplan-Myrth conducted her research in the United States whereas research in this paper dealt with Polish respondents. Therefore, it is probably a working hypothesis suggesting that blind people in Poland have similar body image to sighted people and that despite lack of internalization

of beauty standards they engage in considerably more activities related to keeping their bodies fit and attractive.

Olga Sakson-Obada (2009) emphasizes that experience of one's body is the basis of creating and modifying one's self-image, a source of experiences and that it plays an important, often understated, role in shaping one's identity. Identity in such context is a construct enabling a person to experience positive emotional states, exploring the surroundings and is in general the key to optimal functioning of a person (Izydorczyk, 2014).

The results show no significant differences in neuroticism, agreeableness and conscientiousness between blind and sighted people. This means that personality traits are very similar in both groups and that both blind and sighted people are similarly emotionally adjusted and show similar tendencies to feeling negative emotional states. No significant differences were discerned regarding trust, competitiveness or submissiveness towards others. Blind people are as set on achieving their goals as sighted people and both groups are similarly efficient at organizing their time. These findings are to some extent consistent with the research by Waldemar Klinkosz (2003) which included blind and sighted students. His research, which used NEO-FFI, demonstrated no significant differences between blind and sighted people in terms of neuroticism and conscientiousness. This means that blind people do not feel negative emotions regarding their disability and they are not more likely to become mentally unstable, but they are set on achieving their goals and completing tasks. However, the research shows differences in agreeableness. Visually impaired people, according to Klinkosz, tend to have higher level of agreeableness, which can cause higher levels of altruism and of interpersonal orientation.

Analysis of the NEO-FFI in this paper showed significant differences between blind and sighted people in terms of openness to experience and in terms of extraversion. It turns out that blind people are less likely to search for new situations in life and less likely to feel positive about these situations. Blind people seem more conventional in terms of behaviour and they prefer familiar instead of new solutions, they are also less likely to be open to both external and internal experience. Also, blind people have lower levels of extraversion, lower levels of interpersonal orientation and they are less active than sighted people. They are cautious about other people and they do not need as much stimulation as sighted people. These results are consistent with the above-mentioned research by Klinkosz, although the scholar does not distinguish significant differences between the two groups, he notices that blind people are more likely than visually impaired people to search for new experiences.

Multiple regression analysis demonstrated correlation between neuroticism and body image in blind people, i.e. the higher the levels of neuroticism, the more dissatisfied one is with one's body. Blind people more frequently interpret messages from the environment as criticism, but they are also more motivated when it comes to improving their bodies.

Analysis of certain variables and their impact on body image showed no correlation between sex and body image. However, the analysis showed that negativity concerning body image increases with age. This might be related to increasing awareness of one's corporeality and more exposure to various messages regarding body image, both in media and in personal context. The issue of social comparison in the context of body image has not been examined in any reported studies, therefore above-mentioned conclusions should be treated with caution if they are to be used in research on blind people and their functioning.

Conclusions

The research presented in this study allows to formulate the following conclusions related to self-image and body image characteristics:

1. There is no relationship between blindness and body investment.
2. There is no correlation between congenital blindness and how body image is constructed.
3. Blind people engage more in grooming activities and personal beautification than sighted people.
4. Blind people do not internalize contemporary beauty standards to an extent sighted people do.
5. There is a correlation between blindness and levels of extraversion and openness to experience.
6. Tendency for mental imbalance (neuroticism) negatively influences body image in blind people.
7. Age factor in blind people has negative impact on body image.
8. Body investment in blind people does not influence their body image.

The results presented in this study may serve as a basis for creating personal development programs for blind people. Rehabilitation of disabled people rarely deals with the issue of body corporeality or body image and experience of these in everyday life. Taking into account that blind people's body image and body investment are similar to sighted people's, it is worth considering improving integration of the blind and sighted communities in the context of body image.

The social disability model recognizes and acknowledges multifaceted and complex nature of modern concept of resilience, human nature, mental health and its determinants. This model emphasizes the importance of individual motivation and efforts undertaken for optimal adjustment. Resilience, which could be defined as a specific kind of adaptation, is a process involving unique abilities. It is a phenomenon highly correlated to various factors, among others social cohesion as well as biological and environmental factors.

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