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### **Sense of Coherence and Depressiveness in Adolescents with Visual Disabilities**

The picture of a blind person, who is helpless and dependent on others and who lives plunged into endless darkness has been present in the social consciousness for ages. Submissiveness, helplessness, melancholy, being deep in thought, weakness, fearfulness, nervousness, loneliness, lack of self-confidence, dissatisfaction with life, passivity and poverty – these are some of the features which form a stereotype of a blind person. The results of studies conducted by sociologists, psychologists and special teachers indicate that this stereotype is changing only slightly over time. It is a popular conviction that the functioning of people with visual impairments involves mainly failures and the need to overcome numerous difficulties directly resulting from their disability, and as such this functioning is probably unhappy.

In the literature on the subject, the opinion prevails that a visual impairment is a significant factor which increases the risk of serious disorders in different areas of an individual's psychosocial functioning. Thus most theoretical and scientific works include a list of negative psychological consequences of blindness or low vision, among which anxiety disorders, lowered self-esteem and high neuroticism are most often stressed. More and more frequently, the newest publications on the education of the visually impaired are presenting a slightly different look at visual disability: it is seen as one of a person's many characteristics, not necessarily the most important one. Through such a perspective towards people with visual disabilities, attention is focused on their capabilities rather than their deficits. It also points out how to overcome difficulties resulting from their visual impairment through effective use of their potential.

The information on visually impaired people's mental health at different stages of development presented in the professional literature is very limited, and it is not based on data collected through research very often. The analysis of empirical works shows that psychological problems of blind and low vision people belong to relatively neglected areas of research: the material which has been collected so far is scarce, it often comes from studies conducted with few significantly internally different samples, and with the use of tools which are not adapted to the specific receptive abilities of the population under study. It is worth to note that a certain number of studies which have been carried out so far contradict the existence of "blind people's mentality" by showing no significant differences in the functioning of visually impaired people and those who are nondisabled, thus questioning the rightness of theoretical views prevailing in the literature. Since there are divergences between theory and research, it seems appropriate and justified to undertake further research on the phenomenon under discussion.

## **Research aim**

The presented study aims to determine the level of depressiveness and sense of coherence in blind and low vision persons aged 16-17, and to establish relationship between those two variables. The research was conducted between December 2007 and May 2008.

## **Research questions and hypotheses**

On the basis of the literature on the subject which regards visual impairments as a factor increasing the risk of mental disorders, the following research questions and hypotheses were formulated<sup>1</sup>:

1. Does visual impairment influence the level of depressiveness during middle adolescence?

**H<sub>1</sub>**. The level of depressiveness during middle adolescence is significantly higher in blind and visually impaired people than in sighted people.

2. Does visual impairment influence sense of coherence during middle adolescence?

**H<sub>2</sub>**. Sense of coherence during middle adolescence is significantly lower in blind and visually impaired people than in sighted people.

3. Is the level of depressiveness related to sense of coherence in blind, visually impaired and sighted people during middle adolescence?

**H<sub>3</sub>**. In all three groups under comparison, the level of depressiveness is lower in adolescents whose sense of coherence is higher.

4. Does visual impairment influence the degree of correlation between depressiveness and sense of coherence during middle adolescence?

**H<sub>4</sub>**. The degree of correlation between depressiveness and sense of coherence is higher in blind and visually impaired individuals than in sighted individuals.

## **Characteristics of the sample under study**

The visually disabled group consists of 126 adolescents aged 16-17, including 100 low vision adolescents and 26 blind adolescents; all the adolescents have a statement of disability due to visual impairment; they do not suffer from any other disorders. The respondents attend special residential schools for the blind and visually impaired in Cracow, Laski, Lublin, Lodz, Warsaw and Wroclaw. The sighted group consists of 100 adolescents in three first-grade classes of a high school in Cracow and two first-grade classes of a high school in Warsaw. The quantitative data describing the population under study in terms of gender, age, and the location of the school is presented in Tables 1 and 2.

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<sup>1</sup> For reasons of space, the text presents only a few selected research hypotheses.

| Gender, age (in years)<br>Visual impairment | M   |      | W   |      | 16 |      | 17  |      |
|---|-----|------|-----|------|----|------|-----|------|
|   | N   | %    | N   | %    | N  | %    | N   | %    |
| Sighted                                     | 35  | 15.4 | 65  | 28.8 | 20 | 8.8  | 80  | 35.4 |
| Low vision                                  | 55  | 24.3 | 45  | 19.9 | 47 | 20.8 | 53  | 23.5 |
| Blind                                       | 16  | 7.2  | 10  | 4.4  | 18 | 8.0  | 8   | 3.5  |
| In total                                    | 106 | 46.9 | 120 | 53.1 | 85 | 37.6 | 141 | 62.4 |

**Table 1.** Characteristics of the groups under study in terms of gender and age. Source: author's own research.

| Location of the school<br>Visual impairment | Warsaw | Laski | Cracow | Lublin | Lodz | Wroclaw | In total |
|---|--------|-------|--------|--------|------|---------|----------|
| Sighted                                     | 37     | -     | 63     | -      | -    | -       | 100      |
| Low vision                                  | 30     | 2     | 34     | 5      | 16   | 13      | 100      |
| Blind                                       | -      | 15    | 7      | 1      | 1    | 2       | 26       |
| In total                                    | 67     | 17    | 104    | 6      | 17   | 15      | 226      |

**Table 2.** Characteristics of the groups under study in terms of the location of the school. Source: author's own research.

This significant disproportion in the number of adolescents with visual disabilities accurately reflects the school reality. According to the approximate data provided by the schools' administrative authorities at the initial stage of the research, totally blind students constitute now circa 25% of all their students. The schools in Warsaw and in its surroundings are an exception as a clear division has been established there into a school only for low vision students – a special residential school for visually impaired children and youths located in 7 Kozminska Street in Warsaw (100% - low vision students), and into a school specializing in instruction and rehabilitation of the blind – the Center for the Blind in Laski (over 90% - totally blind students).

The analysis of the structure and organization of special schools where the research was conducted, made on the basis of documents available in the schools, observation of classes and rehabilitation activities, interviews with the students, teachers and student teachers, and also the author's cooperation with these centers to date, shows quite unambiguously that educational and rehabilitation conditions students with visual disabilities are provided with there are beneficial:

- teaching resources and aids are highly available and they are adapted to receptive abilities of blind and visually impaired students, e.g.: textbooks published in alternative formats, tactile graphics, Braille maps, Braille mathematical aids, spatial models illustrating issues under discussion, etc.;
- classrooms and individual students are equipped with specialist IT devices designed specifically for the visually disabled, as well as with optical and non-optical rehabilitation aids which facilitate seeing;
- there are specialist rehabilitation activities conducted there, including among others: learning to use Braille and to read tactile graphics, basic rehabilitation (learning daily living skills), vision rehabilitation, orientation and mobility training, etc.;

- classes are conducted with the use of methodological solutions which take into consideration specific needs and abilities of blind and low vision students, staff are technically competent to work with visually disabled individuals, classes are not large (up to 12 students);
- there are activities, trips, exchanges and ceremonies organized with the aim to integrate students with visual disabilities into activities of their sighted peers and their local community.

The observation of the students' behaviors while the research was being conducted, and their teacher's opinions indicated that the respondents could efficiently use alternative school techniques, including specialist computer equipment. In analyzing the data later and formulating conclusions, it seems essential to take into consideration the favorable school situation of the blind and low vision students in the study, which is due to the specialist nature of the facilities where they are studying. For the literature on the subject and reports on school practice indicate a less favorable educational and psychosocial situation of blind and visually impaired students who attend integrated and general education schools. Moreover, the fact that 82.5% of the respondents live in these residential schools during term time and go home only for weekends additionally increases the importance of the school environment for the students' functioning.

| School type              | General high school | Specialized high school | Massage technical high school | Junior high school | Primary school |
|--------------------------|---------------------|-------------------------|-------------------------------|--------------------|----------------|
| <b>Visual impairment</b> |                     |                         |                               |                    |                |
| Sighted                  | 100                 | -                       | -                             | -                  | -              |
| Low vision               | 3                   | 19                      | 16                            | 62                 | -              |
| Blind                    | 1                   | -                       | 3                             | 21                 | 1              |
| In total                 | 104                 | 19                      | 19                            | 83                 | 1              |

**Table 3.** Characteristics of the groups under study in terms of school type. Source: author's own research.

It is important to note the data on school types presented in Table 3, which show that 65.8% of 16-17-year-old adolescents with visual disabilities are still junior high students, while their sighted peers are already first grade high school students. 71.5% of the blind and visually impaired junior high students are in the third grade, 23.5% - in the second grade, and 5% - in the first grade. The main reasons for the delay in the educational process listed by the students' teachers are: postponement of compulsory education due to disability (students are in preschool programs or early intervention centers up to the age of 10), frequent hospitalizations resulting in high absence from school and the necessity to repeat the grade, substantial delays in mastering learning techniques specific to the blind and visually impaired as a result of previous experiences gained in general education primary schools and/or family neglect.

The different stage of education makes the situation of the adolescents with visual disabilities and the sighted adolescents under study significantly different. Despite being at the same age, they come under various influences in their school environment: for the sighted youths, it is the first year in a new school and class, while the youths with visual disabilities are not experiencing the change of school or a peer group (34.2% of them are first grade

students in high schools, specialized high schools and technical high schools, but these schools are part of the same residential programs, where whole classes are transferred to new schools within the same program in a flexible way).

### **Description of the research tools**

*The Cracow Depressive Inventory I.O. "C1" (KID "C1")*, the first Polish tool designed by a team of researchers under Prof. Jacek Bomba's direction, was used to assess depressiveness. This instrument allows depression screening in youths in middle adolescence<sup>2</sup>.

*The Sense of Coherence Scale for Adolescents SOC-M13* [adapted version of A. Antonovsky's scale (1987/1995) based on the Polish version of the SOC-29 scale and on the version of the SOC-13 scale by T. Torsheim and B. Wold (1997)<sup>3</sup>] was used to assess sense of coherence.

In accordance with the guidelines for testing individuals with disabilities, which are presented in the newest version of *Standards for Educational and Psychological Testing* (1999/2007, p. 178-190), the questionnaires were modified so as to take into consideration specific needs and receptive abilities of individuals with visual disabilities.

### **Results**

In order to assess depressiveness in the groups being compared, basic descriptive statistics for overall depressiveness and individual psychopathological areas were calculated; a detailed review of the data is presented in Table 4. The collected data indicated differences in the average level of overall depressiveness in the compared groups - it amounted to 5.94 in sighted adolescents, 5.81 – in low vision adolescents, and 5.27 – in blind adolescents. The total score in the whole sample was 5.81. In the area of cognitive disorders, activity disorders and somatic symptoms, the sighted group had the highest mean score. The average level of mood disorders, anxiety and self-destructive behaviors was the highest in the low vision group. It is important to note that it was the group of totally blind adolescents which showed the lowest mean values among the three groups, except for scale A.

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<sup>2</sup> The description of the structure and the use of the KID "C1" can be found in publications by Prof. J. Bomba and in the unpublished master's thesis written by the author of this article (see *References*).

<sup>3</sup> Detailed psychometric data on the SOC-M13 scale are presented in publications by Zwolinski, Jelonkiewicz and Kosinska-Dec (2001), and the information on *The Orientation to Life Questionnaire SOC-29* - in Antonovsky's *Unraveling...* (1987/1995, p. 71-90).

| Visual impairment | Statistics | Overall score | A           | B           | C           | D           | E           | F           |
|-------------------|------------|---------------|-------------|-------------|-------------|-------------|-------------|-------------|
| <b>Sighted</b>    | Mean       | <b>5.94</b>   | <b>6.07</b> | <b>5.62</b> | <b>6.39</b> | <b>6.19</b> | <b>5.82</b> | <b>5.90</b> |
|                   | N          | 100           | 100         | 100         | 100         | 100         | 100         | 100         |
|                   | SD         | 1.830         | 1.659       | 1.984       | 1.863       | 1.650       | 1.690       | 2.254       |
|                   | Skewness   | .020          | -.303       | .282        | -0.72       | -.242       | .186        | -.078       |
| <b>Low vision</b> | Mean       | <b>5.81</b>   | <b>6.24</b> | <b>5.67</b> | <b>5.81</b> | <b>6.02</b> | <b>6.10</b> | <b>5.82</b> |
|                   | N          | 100           | 100         | 100         | 100         | 100         | 100         | 100         |
|                   | SD         | 2.107         | 1.741       | 1.864       | 2.073       | 1.886       | 1.829       | 2.171       |
|                   | Skewness   | -.399         | -.401       | -.011       | -.116       | -.306       | .244        | -.102       |
| <b>Blind</b>      | Mean       | <b>5.27</b>   | <b>6.12</b> | <b>5.54</b> | <b>5.08</b> | <b>5.42</b> | <b>4.92</b> | <b>5.65</b> |
|                   | N          | 26            | 26          | 26          | 26          | 26          | 26          | 26          |
|                   | SD         | 1.845         | 1.505       | 1.772       | 1.521       | 1.701       | 1.383       | 2.591       |
|                   | Skewness   | .481          | .322        | .352        | -.509       | .539        | .345        | .370        |
| <b>In total</b>   | Mean       | <b>5.81</b>   | <b>6.15</b> | <b>5.63</b> | <b>5.98</b> | <b>6.03</b> | <b>5.84</b> | <b>5.84</b> |
|                   | N          | 226           | 226         | 226         | 226         | 226         | 226         | 226         |
|                   | SD         | 1.961         | 1.674       | 1.900       | 1.771       | 1.771       | 1.752       | 2.250       |
|                   | Skewness   | -.167         | -.292       | .166        | -.092       | -.205       | .286        | -.023       |

**Table 4.** Descriptive statistics for overall depressiveness and individual scales in the groups under study. Symbols: A-mood disorders, B-anxiety, C-cognitive disorders, D-activity disorders, E-self-destructive behaviors, F-somatic symptoms.

Since the number of respondents in each group was not even, and the variables under study were not normally distributed, the significance of differences between the medians in overall depressiveness and in individual psychopathological areas was analyzed with the nonparametric Kruskal-Wallis test – Tables 5a and 5b. The Kruskal-Wallis value proved there were no statistically significant differences between the groups under study in terms of overall depressiveness and its aspects, such as: mood disorders, anxiety, activity disorders and somatic symptoms. However, the differences between mean values on the scale of cognitive disorders were statistically significant (chi-square = 9.826, df=2, p=0.007), as well as on the scale of self-destructive behaviors (chi-square = 8.907, df=2, p=0.012).

| Variables                    | Groups | Mean rank |            |        |
|------------------------------|--------|-----------|------------|--------|
|                              |        | Sighted   | Low vision | Blind  |
| depression – overall score   |        | 116.15    | 116.31     | 92.52  |
| A-mood disorders             |        | 110.18    | 118.74     | 106.15 |
| B-anxiety                    |        | 112.73    | 115.21     | 109.90 |
| C-cognitive disorders        |        | 125.88    | 108.95     | 83.40  |
| D-activity disorders         |        | 118.59    | 115.11     | 87.73  |
| E-self-destructive behaviors |        | 113.26    | 122.19     | 81.00  |
| F-somatic symptoms           |        | 115.48    | 113.67     | 105.25 |

**Table 5a.** Mean ranks of scores in depressiveness and individual scales in the groups under study.

| Variables    | Overall score | A     | B    | C           | D     | E           | F    |
|--------------|---------------|-------|------|-------------|-------|-------------|------|
| Chi-square   | 3.122         | 1.283 | .165 | 9.826       | 4.887 | 8.907       | .52  |
| df           | 2             | 2     | 2    | 2           | 2     | 2           | 2    |
| Significance | .210          | .526  | .921 | <b>.007</b> | .087  | <b>.012</b> | .771 |

**Table 5b.** Evaluation of the statistical significance of differences between the means in depressiveness and individual scales.

The use of the nonparametric Mann-Whitney U test showed that in the case of cognitive disorders (Scale C), all the groups under study were statistically significantly different from each other, and the average level of these disorders was higher in the sighted group than in the visually disabled groups; detailed data on the compared groups are shown in Table 6.

| Visual impairment | N   | Mean rank | Ranks in total | Mann-Whitney U test | Unilateral (directional) significance |
|-------------------|-----|-----------|----------------|---------------------|---------------------------------------|
| Sighted           | 100 | 107.90    | 10789.50       | 4260.500            | <b>.033</b>                           |
| Low vision        | 100 | 93.11     | 9310.50        |                     |                                       |
| Sighted           | 100 | 68.49     | 6848.50        | 801.500             | <b>.001</b>                           |
| Blind             | 26  | 44.33     | 1152.50        |                     |                                       |
| Low vision        | 100 | 66.34     | 6634.00        | 1016.000            | <b>.041</b>                           |
| Blind             | 26  | 52.58     | 1367.00        |                     |                                       |

**Table 6.** Statistical significance of differences among the groups under study on Scale C.

On the scale of self-destructive behaviors, the sighted group differed significantly from the blind group, and the low vision group differed significantly from the blind group. The differences between the means on this scale were statistically insignificant in the case of the sighted group versus the low vision group. The low vision group scored highest on this scale, and the blind group scored lowest; detailed information on the compared groups are shown in Table 7.

| Visual impairment | N   | Mean rank | Ranks in total | Mann-Whitney U test | Unilateral (directional) significance |
|-------------------|-----|-----------|----------------|---------------------|---------------------------------------|
| Sighted           | 100 | 96.44     | 9644.00        | 4594.000            | .151                                  |
| Low vision        | 100 | 104.56    | 10456.00       |                     |                                       |
| Sighted           | 100 | 67.32     | 6732.00        | 918.000             | <b>.008</b>                           |
| Blind             | 26  | 48.81     | 1269.00        |                     |                                       |
| Low vision        | 100 | 68.13     | 6813.00        | 837.000             | <b>.002</b>                           |
| Blind             | 26  | 45.69     | 1188.00        |                     |                                       |

**Table 7.** Statistical significance of differences among the groups under study on Scale E.

The hypothesis on adolescents with visual disabilities having a lower sense of coherence than sighted adolescents was tested by calculating basic statistics and comparing the average scores for sense of coherence and its components: meaningfulness, manageability and comprehensibility. The results of statistical conclusions are shown in Table 8.

| Visual impairment | Statistics | Sense of coherence | Meaningfulness | Manageability | Comprehensibility |
|-------------------|------------|--------------------|----------------|---------------|-------------------|
| <b>Sighted</b>    | Mean       | <b>40.66</b>       | <b>13.36</b>   | <b>12.08</b>  | <b>15.22</b>      |
|                   | N          | 100                | 100            | 100           | 100               |
|                   | SD         | 7.183              | 2.456          | 2.718         | 3.532             |
|                   | Skewness   | -.181              | .124           | -.160         | -.281             |
| <b>Low vision</b> | Mean       | <b>40.78</b>       | <b>13.62</b>   | <b>11.75</b>  | <b>15.31</b>      |
|                   | N          | 100                | 100            | 100           | 100               |
|                   | SD         | 9.065              | 2.926          | 3.745         | 4.554             |
|                   | Skewness   | .010               | -.608          | .143          | .122              |
| <b>Blind</b>      | Mean       | <b>43.58</b>       | <b>14.19</b>   | <b>13.08</b>  | <b>16.31</b>      |
|                   | N          | 26                 | 26             | 26            | 26                |
|                   | SD         | 8.066              | 3.073          | 2.785         | 3.728             |
|                   | Skewness   | -.935              | -1.334         | -.953         | -1.145            |
| <b>In total</b>   | Mean       | <b>41.05</b>       | <b>13.57</b>   | <b>12.05</b>  | <b>15.38</b>      |
|                   | N          | 226                | 226            | 226           | 226               |
|                   | SD         | 8.181              | 2.745          | 3.232         | 4.034             |
|                   | Skewness   | -.138              | -.434          | -.081         | -.105             |

**Table 8.** Descriptive statistics for sense of coherence and its components in the groups under study.

The expectations about a significantly lower sense of coherence in blind and visually impaired adolescents did not prove right. The mean scores of the compared groups were different; however, it was the blind group which had the highest means for all the variables. The scores of the low vision group were higher than the sighted group's scores in the area of sense of coherence, manageability and comprehensibility.

The value of the Kruskal-Wallis test (Tables 9a and 9b) proved that there were no statistically significant differences between the groups under study as for sense of coherence and its two components, i.e. meaningfulness and comprehensibility. However, the differences between the mean values on the scale of manageability were statistically significantly different.

| Variables          | Groups | Mean rank |            |        |
|--------------------|--------|-----------|------------|--------|
|                    |        | Sighted   | Low vision | Blind  |
| sense of coherence |        | 109.60    | 111.39     | 136.65 |
| meaningfulness     |        | 105.59    | 115.76     | 135.23 |
| manageability      |        | 114.32    | 106.03     | 139.10 |
| comprehensibility  |        | 110.81    | 111.45     | 131.75 |

**Table 9a.** Mean ranks of the scores for sense of coherence and its components in the groups under study.

| Variables \ Statistics | Sense of coherence | Meaningfulness | Manageability | Comprehensibility |
|------------------------|--------------------|----------------|---------------|-------------------|
| Chi-square             | 3.727              | 4.533          | 5.360         | 2.309             |
| df                     | 2                  | 2              | 2             | 2                 |
| Significance           | .77                | .52            | <b>.034</b>   | .157              |

**Table 9b.** Evaluation of the statistical significance of differences between the means for sense of coherence and its components.

The nonparametric Mann-Whitney U test, used to determine which groups differed significantly in terms of manageability, revealed that the differences in this area between the sighted group and the low vision one were not statistically significant. The test showed

statistically significant differences in manageability between the sighted group and the blind one, as well as between the groups of disabled adolescents (Table 10).

| Visual impairment | N   | Mean rank | Ranks in total | Mann-Whitney U test | Unilateral (directional) significance |
|-------------------|-----|-----------|----------------|---------------------|---------------------------------------|
| Sighted           | 100 | 104.77    | 10476.50       | 4573.500            | .147                                  |
| Low vision        | 100 | 96.24     | 9623.50        |                     |                                       |
| Sighted           | 100 | 60.06     | 6005.50        | 955.500             | <b>.018</b>                           |
| Blind             | 26  | 76.75     | 1995.50        |                     |                                       |
| Low vision        | 100 | 60.29     | 6029.00        | 979.000             | <b>.026</b>                           |
| Blind             | 26  | 75.85     | 1972.00        |                     |                                       |

**Table 10.** Statistical significance of differences between the groups under study on the manageability scale.

To test the hypothesis on depressiveness being lower in the respondents with a higher sense of coherence, the r-Pearson correlation coefficient was calculated for the whole sample, and then for individual groups under study.

The results:  $n = 226$ ,  $r = - 0.652$ ,  $p = 0.0005$  in the whole sample;  $n = 100$ ,  $r = - 0.662$ ,  $p = 0.0005$  in the sighted group;  $n = 100$ ,  $r = - 0.630$ ,  $p = 0.0005$  in the low vision group; and  $n = 26$ ,  $r = - 0.696$ ,  $p = 0.0005$  in the blind group proved the hypothesis right. A strong negative correlation was found between depressiveness and sense of coherence in the whole sample and in each group under study.

## Conclusions

To sum up, the following conclusions can be formulated on the basis of this research:

1. There are no statistically significant differences among blind, visually impaired and sighted youths in middle adolescence in the area of overall depressiveness.
2. The level of cognitive disorders is significantly higher in sighted youths in middle adolescence than in blind and visually impaired youths.
3. The level of self-destructive behaviors is significantly higher in visually impaired and sighted 16-17-year-old adolescents than in blind adolescents.
4. There are no statistically significant differences among blind, visually impaired and sighted youths in middle adolescence in the area of sense of coherence, meaningfulness and comprehensibility.
5. The level of manageability is significantly higher in blind adolescents than in visually impaired and sighted adolescents.
6. The level of depressiveness is significantly lower in respondents with a higher sense of coherence in all the groups under study. This relationship is stronger in blind adolescents than in visually impaired or sighted adolescents.

## Instead of summary

*This test is for desperate people, and my life is colorful. I'm really lucky in life. (M, 16, blind, Lodz)*

*I chose “no” everywhere here, because life isn’t always easy, but you can’t give up. Generally, my life is good for example!* (M, 17, blind, Laski)

*The fact that you can’t see doesn’t mean you have to be sad and worry all the time. You have to grid up your loins and learn to do things in a slightly different way. If your teachers understand what it means to learn without seeing, you really can manage.* (W, 17, blind, Wrocław)

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