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Paper Accepted* **ISSN Online 2406-0895**

Original Article / Оригинални рад

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Structure of the attitudes towards cosmetic procedures acceptance

Структура става према прихватању естетских интервенција

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Received: March 27, 2019
Revised: June 26, 2019
Accepted: July 5, 2019
Online First: August 6, 2019
DOI: https://doi.org/10.2298/SARH190327087S

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SUMMARY

Introduction/Objective The aim of our study was to investigate the structure of the cosmetic procedures' acceptance attitudes and differences in acceptance between persons that had previously undergone minimally invasive cosmetic procedures and those who had not.

Methods The study included 245 subjects (treatment group), 21 to 73 years old (42.02 ± 12.12). The control group included 250 subjects who hadn't previously undergone cosmetic procedures, also 21 to 73 years old (40.19 ± 11.71). The control group was balanced with the treatment group according to category distribution of demographic variables. The Acceptance of Cosmetic Surgery Scale, adjusted for cosmetic procedures in general, was used for evaluation of participants attitudes towards these procedures.

Results Internal consistency of the scale was $\alpha = 0.963$, the split-half coefficient of validity was 0.861/0.810, and test-retest correlation coefficient 0.892. The treatment group has shown overall higher acceptance ($t(478) = 27.024$, $p<0.001$, $\eta^2 = 0.6$), and higher scores on all three dimensions. No demographic variable has shown significant differences in total and individual factor scores in either group.

Conclusion Subjects from both groups had scored higher on items that deal with the advantages of cosmetic procedures on a personal level (Intrapersonal factor).

Keywords: minimally invasive cosmetic procedures; acceptance of cosmetic procedures; attitudes

САЖЕТАК

Увод/Циљ Циљ студије је био испитати структуру ставова према прихватању естетских интервенција и потенцијалне разлике између особа које су претходно имале неку минимално инвазивну естетску интервенцију и оних који то нису.

Методе У студију је укључено 245 испитаника (третирана група), од 21 до 73 године старости (42.02±12.12). Контролну групу је чинило 250 испитаника који нису имали претходне естетске интервенције, такође од 21 до 73 године старости (40.19±11.71). Контролна група је избалансирана у односу на дистрибуцију одговарајућих демографских категорија испитаника из третиране групе. За процену ставова испитаника према естетским интервенцијама коришћена је Скала прихватања естетских хируршких интервенција, прилагођена је за све врсте ових процедура.

Резултати Интерна конзистентност скале износила је $\alpha=0.963$, *split-half* коефицијент валидности 0.861/0.810, а тест-ретест коефицијент корелације је износио 0.892. Третирана група је бележила значајно веће прихватање ($t(478)=27.024$, $p<0.001$, $\eta^2=0.6$), и више скорове на све три димензије скале. Категорије демографских варијабли, у обе групе, нису показале значајне разлике у укупном и факторским скоровима на скали.

Закључак Испитаници из обе групе су постигли више скорове на тврдњама које се односе на предности естетских интервенција из интерперсоналних разлога.

Кључне речи: минимално инвазивне естетске процедуре; прихватање естетских интервенција; ставови

INTRODUCTION

It is indisputable that there is a big and constant *social pressure* to achieve the physical appearance ideal in today's day and age [1], despite the constant changes of this ideal over the past thirty years. The need to stay ever so young is also something that represents an important component of modern age. Numerous researches have shown that people have a greater tendency to attribute *positive personality traits* to physically attractive individuals [2], who are then *better treated* in all manners of everyday social interactions. A similar tendency can be seen in social perception and reactions of the observers to the persons who have

undergone certain aesthetic interventions. They evaluate these persons as younger, more attractive, more successful, and ascribe positive character traits to them [3]. Possibly the greatest advantage that is associated with a better physical appearance (especially by people who perceive themselves negatively) aren't social relationships, but their own psychological state such as *satisfaction with bodily image* and *quality of life* [4].

Cosmetic procedures

The number of attempts at altering one's phyisical appearance through both surgical and non-surgical medical interventions is constantly rising [5, 6]. Nowadays, non-surgical and minimally invasive cosmetic procedures are increasingly popular, because they do not require much time, general anesthesia or major surgical procedures, they have short recovery periods, the patient can continue with everyday activities instantly, and the side-effects are minimal and relatively safe [7, 8]. Over the past ten years, there was a significant improvement of non-invasive procedures, such as fillers, or toxin injections, lasers and other technologies based on light rays, used for rejuvenation of face, arms, breasts, as well as removal of aesthetic effects caused by aging, sun exposure, bad dietary habits and smoking.

However, the specific trait of non-surgical cosmetic procedures is also the fact that they must be repeated over certain periods of time to maintain the desired appearance, which is why it is not unusual for one person to have more than five treatments over the course of a year [7, 8]. The most common non-invasive aesthetic procedures in both genders are botulinum toxin injection, hyaluronic acid, hair transplantation, chemical peeling, and microdermabrasion [5, 6].

Acceptance of cosmetic procedures

Body image is a person's subjective perception of the aesthetics of their own body, and reflects their attitudes, thoughts, and emotions towards their own body, but also the way in which a person interprets the reactions of others. Modern age and advancement of aesthetic medicine impose a social pressure towards one's physical appearance, and the fact that most people cannot achieve the physical appearance ideal makes them dissatisfied with their

appearance. Despite that, not all people who are dissatisfied with their outside appearance choose to undertake medical aesthetic procedures. Factors that have so far been associated with the decision to undertake aesthetic medical procedures include intrapersonal factors such as unsatisfaction with personal appearance, appearance orientation, social factors - internalization of sociocultural messages, appearance conversations with peers, and pressure from the media for striving towards the physical appearance ideals [9, 10, 11]. Moreover, it was also found that positive experience with aesthetic procedures of people that are in a close social surrounding of a person (e.g. friend or family member) plays an important role [12].

Subjective component of cosmetic procedures acceptance includes attitudes of a person towards the general physical appearance, or appearance of particular body parts [13]. The core aspect of discontent with own body image is a discrepancy between the perceived and ideal self, both in self ideal, and the ideals imposed by society [8, 13]. Multiple studies have shown that people who decide to undertake cosmetic procedures have gone through ridicule or some other form of social pressure because of their physical appearance at a certain point in their lifes. For instance, women who have undergone breast augmentation surgery have reported a greater rate of appearance-related teasing than did other women [14].

The most common way of researching attitudes towards aesthetic procedures is investigating attitudes in the general population, with an emphasis on people's determination to undergo a certain cosmetic/aesthetic procedure, and the motivation that has led them to such a decision [15]. Two motivational factors emerge in that context - acceptance of cosmetic procedures for social and intrapersonal reasons [15], which is in line with the idea that one's physical appearance is reflected both through their self-image, as well as social impressions and interactions with others.

However, very few studies have investigated particular, specific subpopulations that aren't the general population.

This study is part of a larger study that has tried to find a connection between the acceptance of cosmetic procedures and certain personality traits. Nonetheless, as a first step and aim, it was necessary to examine and understand the basic characteristics, contents and differences in attitudes towards cosmetic procedures between people that had undergone previous non-surgical, minimally invasive cosmetic procedures (treatment group) and those who hadn't (control group). Also, the second aim was to validate (internal consistency, test-

retest reliability, confirmative factor structure) the Acceptance of Cosmetic Surgery Scale in population of people who had minimally invasive cosmetic procedures.

METHODS

The study was conducted at the Aesthetic Medical Centre in Belgrade, Serbia, over the course of three months. The study was approved by the Ethics Committee of the Faculty of Medical Sciences, University of Kragujevac, Serbia. The study has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki-Tokyo). All the subjects filled in the questionnaire anonymously after they were informed about the purpose of the research.

General *inclusion criteria* were age of at least 18, and signed informed consent form. Inclusion criteria for the treatment group was that the participant had previously undergone a non-surgical cosmetic procedure, and hadn't undergone any surgical aesthetic procedures. The control group was created from the general population, and balanced with the treatment group according to category distribution in the demographic variables that were of relevance for this study: gender, age, education, and marital status. *Exclusion criteria* in the control group was if the participants had previously undergone any non-surgical or surgical cosmetic procedures.

Participants

The study included 245 participants in the treatment group, 13 (5.3%) male, and 232 (94.7%) female. Mean age was 42.02 ± 12.12, ranging from 21 to 73 years of age. The study included 250 participants in the control group, 16 (6.4%) male, and 234 (93.6%) female. Mean age was 40.19 ± 11.71, ranging from 21 to 73 years of age. Also, 100 participants from the control group were retested one month after the first test.

The control group was balanced with the treatment group in all basic demographic variables: gender ($\chi^2(1) = 0.107$, $p = 0.744$), age ($\chi^2(4) = 1.744$, $p = 0.783$), education ($\chi^2(3) = 5.931$, $p = 0.115$), marital status ($\chi^2(3) = 0.706$, $p = 0.872$), and number of children ($\chi^2(4) = 2.436$, $p = 0.656$). The only demographic variables with statistically significant differences

between the groups were employment status and economic status, with the participants from the treatment group having better employment status ($\chi^2(4) = 19.096$, $p < 0.001$), and economic status ($\chi^2(4) = 57.794$, $p < 0.001$).

A comparison of demographic variables was given in Table 1.

There was no statistically significant differences between the two groups in mean values of body mass index ($t(342) = -1.454$, $p = 0.147$).

Similar to previous studies conducted on the same population [7, 8], the treatment group participants had on average ten non-surgical cosmetic procedures, out of which the most frequent ones were facial (more than a half of the procedures, 53%). The most commonly used techniques were different types of fillers and removal of stretch marks (around a quarter of the procedures, each), immediately followed by body mesotherapy (20%), face mesotherapy (16%), and hair removal, cavitation etc, up to 5%.

Measures

A questionnaire constructed for this study gathered information about the following sociodemographic characteristics of the participants: gender, age, education, economic status, employment status, marital status, number of children, and number of cosmetic procedures.

Acceptance of Cosmetic Surgery Scale [15] is one of the most used instruments for assessment of attitudes towards cosmetic, aesthetic procedures, and has been standardized in multiple languages, including the Serbian version [9, 16]. In our version, the instrument is consisted of the same 15 items that are answered through a seven-point Likert scale with answers ranging from 1 (I strongly disagree) to 7 (I strongly agree), with the only change being that the instructions emphasized that *the term cosmetic procedure* includes not only surgical, but also *minimally invasive cosmetic procedures* (fillers, botulinum toxin, stretch marks removal, laser, etc.). Beside the summed score, the scale can be divided into three factors: Intrapersonal, Social, and Consider. The first measures attitudes related to self-oriented benefits of aesthetic procedures, enhancing self-esteem and personal satisfaction (e.g., “Cosmetic procedures are a good thing because they can help people feel better about themselves”). The second factor measures social motivation for having aesthetic procedures

as means of gaining social benefits or appearing more attractive to others (e.g., "I would seriously consider having cosmetic procedures if my partner thought it was a good idea"). The third factor measures the participants' interest for these procedures, in other words, the probability that a person would consider having a aesthetic procedure (e.g., "If I knew there would be no negative side effects or pain, I would like to try having a cosmetic procedure"). The scale showed high reliability and test-retest correlation [9, 15, 16]. It took fifteen to twenty minutes to complete the questionnaire and the scale.

Statistical analysis

Besides descriptive statistics (central tendency measures and percentages), analyses for determining statistical differences were used: t-test for independent samples and ANOVA, as well as chi-square tests for categorical variables. For correlation analyses, we used Pearson's and Spearman's coefficients of correlation. Normal distribution was estimated by means of the Kolmogotov-Smirnov test. Confirmatory factor analysis, *Maximum likelihood method*, was also used. The analyses were conducted in the statistical programme PASW Statistics, version 18, as well as Amos 18.

RESULTS

Acceptance of cosmetic interventions

Internal consistency of the scale has shown high values of $\alpha = 0.963$, with item-total correlation ranging from $r = 0.673$ to 0.876. The split-half (Spearman-Brown) coefficient of validity was 0.861 in the control group, and 0.810 in the treatment group. Test-retest coefficient of correlation was $r = 0.892$.

The scale has shown good preliminary results that justified further factor analysis (Bartlett's test of sphericity $\chi^2(105) = 7454.35$, $p < 0.01$, KMO = 0.96). Based on existing research, we used confirmatory factor analysis, *Maximum likelihood method*, and comparison of models with two or three factors (Table 2).

Due to the fact that preliminary analysis has shown that the two groups had differences in total scores on the scale, factor structure analysis was also conducted separately, by groups. In the treatment group, the model accounts for a total of 67.04% variance, with the first factor accounting for 47.20%, second factor for 10.77%, and third factor for 9.08% variance.

In the control group, the model accounts for a total of 66.95% variance, with the first factor accounting for 48.41%, second factor for 10.90%, and third factor for 7.91%.

The items were distributed completely according to factors in both groups, and all had factor loadings greater than 0.50. Whereas the Social factor accounted for the least variance in the control group, this factor accounted for much more variance in the treatment group. In both groups, the Intrapersonal factor accounted for more variance than the Consideration factor.

Scores on factors show high intercorrelation, making it possible to analyze a unique, total score on the scale, which was possible on the original scale as well (Figure 1).

General descriptive data for factor scores and total scores on the Acceptance of Cosmetic Surgery Scale, according to groups, were given in Table 3.

Even though scores of both groups have a tendency towards higher values, these tendencies are more prominent in the treatment group, with the control group having milder tendencies, as shown on the histogram for one of the factors (Figure 2).

Comparison of group differences shows that the treatment group has higher total Acceptance ($t(478) = 27.024$, $p < 0.01$, $\eta^2 = 0.6$), as well as factor scores in Intrapersonal ($t(430) = 17.556$, $p < 0.01$, $\eta^2 = 0.38$), Consider ($t(441) = 27.218$, $p < 0.01$, $\eta^2 = 0.6$), and Social factors ($t(473) = 23.470$, $p < 0.01$, $\eta^2 = 0.53$), and all the differences had a large effect size.

Highest scores in the control group were given in items dealing with advantages of cosmetic, aesthetic procedures in general (e.g., “It makes sense to have minor cosmetic intervention rather than spending years feeling bad about the way you look”, M = 5.18, or “Cosmetic interventions are a good thing because they can help people feel better about themselves”, M = 4.66). Whenever the items were about the issue of whether or not the

participants themselves would actually try such a procedure, mean scores were lower. However, questions dealing with social acceptance, especially by the participant's partner had the lowest mean scores (e.g., "I would seriously consider having a aesthetic procedure if my partner thought it was a good idea", M = 1.72, or "I would seriously consider having a cosmetic procedure if I thought my partner would find me more attractive", M = 1.76).

The treatment group had the highest mean scores in items that belong to the Intrapersonal factor, i.e., are dealing with advantages of cosmetic procedures (e.g., "It makes sense to have a minor aesthetic procedure rather than spending years feeling bad about the way you look", M = 6.56, or "Aesthetic procedures are a good thing because they can help people feel better about themselves", M = 6.44). Similar to the control group, mean scores on items that were dealing with partner's social acceptance were the lowest (e.g., "I would seriously consider having a aesthetic procedure if my partner thought it was a good idea", M = 4.24), but much higher than in the control group.

Differences in acceptance according to demographic characteristics

Analyses in both groups have shown that no demographic characteristic showed significant differences in the total score or factor scores (Table 4).

Also, no correlation was found with continuous demographic variables Table 5.

DISCUSSION

The three-factor model of cosmetic surgery acceptance that was created in this study, and that confirms the original structure of the questionnaire, consisted of the following factors: Intrapersonal, Consider, and Social. The Intrapersonal factor accounted for most of the variance, followed by Social, and Consider factors.

It is obvious that the degree to which persons are satisfied or dissatisfied with their own body has strong implication on their self-awareness, self-respect, and social behaviour, as well as their attitudes towards acceptance of cosmetic procedures. Body image dissatisfaction impacts quality of life, and it is believed to be a motivation for a number of body altering

procedures as well as related activities (being on diets, getting informed about cosmetic procedures, saving money, medical tourism and the like) [17, 18]. This is further supported in our study by high scores on items such as: "It makes sense to have minor aesthetic intervention rather than spending years feeling bad about the way you look", or "Cosmetic interventions are a good thing because they can help people feel better about themselves". Other studies have also found that sociocultural influences are not the only significant factor for the development of attitudes towards cosmetic interventions, but rather that specific aspects of the *self* also play an important role. For instance, self-monitoring and self-awareness (both private and public) had a direct effect on women's consideration of breast cosmetic surgery [19].

Other studies have also shown that the feelings about one's own looks are the key factor in deciding upon a cosmetic surgery, and that reactions to changes caused by these interventions are more positive if reasons are personal and not under the influence of the partner [20]. On the other hand, even though our participants had lowest mean scores on items dealing with social factors, especially partner opinions, high pressure on a person is certainly being made by various social and cultural influences. Despite the possibility that people consciously reject the importance of influence of other people, negative comments about someone's physical appearance may be interpreted as subconscious pressure, thus causing dissatisfaction and low self-esteem [8]. Furthermore, imposed social standards and ideals of physical appearance that are broadcasted through media, especially by fashion and aesthetic industry advertisments, have a huge influence on our own body image perception [11, 21], and may become internalized standards for understanding the importance of physical appearance. Additionally, as the popularity of aesthetic procedures grows, so does media attention, and general social acceptance of cosmetic procedures, therefore, also the general interest for aesthetic procedures.

The risk for development of dissatisfaction with own body image is higher in persons who constantly compare themselves with others [4, 22]. Prior studies which have used this scale have shown that the lower a person's appearance and social self-esteem is, the more likely she/he is to accept cosmetic surgery [15]. In line with that, a particular score stood out on the Social factor, negatively correlating with social self-esteem. The fact that most people, more often women, decide to undergo aesthetic procedures after they are 35, and in their early 50s, i.e., at the first signs of old age and climacteric period is unsurprising [7]. It is also

not unusual how acceptance of cosmetic procedures is linked with lower self-esteem and self-confidence, as well as tendencies towards hyperthimic temperament and conformity [8, 22].

Finally, this type of factor categorization may correlate with the principles of the *Theory of planned behavior* [23], because the final decision (in our case the Consider factor) stands under the influence of Intrapersonal factors, beliefs and prior experience, and Social factors, pressures, and norms in the social environment of the person.

Differences according to demographic characteristics

Compared to the original study [15], our study had no connections between gender and age of participants (in either groups) and scores on this scale. It is essential to underline that the fact that there are prominent differences between the two groups in acceptance (particularly on the social factor) but no differences according to demographic variables, speaks in favour of other personal characteristics, most likely of physchological and/or social nature, which have a greater impact on accepting this type of an intervention. Therefore, in future studies researchers should examine the influence of some of the psychological characteristics, ideally through a longitudinal study.

The scale characteristics

It should also be noted that the Serbian version of this scale has been adapted for cosmetic procedures in general (not only surgical procedures), and has exhibited good overall internal consistency and construct validity scores in both groups. The test-retest reliability coefficient indicates a stable reliability over time. Our study also corroborates evidence from previous studies reporting that the three factors are mutually dependent, and one total score can be used when describing cosmetic intervention acceptance.

CONCLUSION

The feelings about one's own looks are the key factor in deciding upon a cosmetic surgery, however, even though our participants had lowest mean scores on items dealing with social factors, high pressure on a person's body image perception is certainly being made by

various social and cultural influences. Finally, the Serbian version of this scale has been adapted for cosmetic procedures in general (not only surgical procedures) and has exhibited good psychometric properties.

Conflict of interest: None declared.

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Table 1. Demographic characteristics of the subsamples

Treatment group

Education	%	**Marital status**	%	**Employment status**	%	**Economic status**	%	**Nº of children**	%
secondary	19.2	married	43.7	employed	79.2	lower middle	5.3	none	50.6
univ. students	7.3	with a part ner	25.3	unemployed	7.8	middle	26.5	one	18
graduates	73.5	single	20.4	univ. students	4.9	upper middle	34.7	two	27.3
		other	10.6	pensioners	8.2	high	33.5	three +	4.1

Control group

Education	%	**Marital status**	%	**Employment status**	%	**Economic status**	%	**Nº of children**	%
secondary	24.8	married	46	employed	66.8	lower middle	26.8	none	47.2
univ. students	10.4	with a part ner	26.4	unemployed	16.4	middle	33.2	one	20
graduates	64.8	single	18	univ. students	9.6	upper middle	24	two	28
		other	9.6	pensioners	7.2	high	16	three +	4.8

Table 2. Model fit indices

	χ^2/df	p	GFI	AGFI	CFI	RMSEA	PCLOSE
Two-factor model	3.320	< 0.001	0.932	0.897	0.975	0.069	0.001
Three-factor model	3.079	< 0.001	0.935	0.905	0.978	0.064	0.001

GFI – goodness of fit; AGFI – adjusted goodness of fit index; CFI –comparative fit index; RMSEA – root mean square error of approximation; PCLOSE – p of close fit

Table 3. Descriptive statistics for acceptance factors

	group	Min–Max.	Mean	Std. dev.	Std. error mean	Skewness	Kurtosis	z	α
intrapersonal	treatment	5-35	31.18	4.728	0.302	-2.210	6.514	0.210**	0.85
	control	5-35	21.55	7.241	0.458	-0.400	-0.485	0.103**	0.85
consider	treatment	5-35	30.95	5.493	0.351	-2.123	5.326	0.231**	0.88
	control	5-35	14.16	8.022	0.507	0.773	-0.426	0.137**	0.88
social	treatment	5-35	24.29	7.449	0.476	-0.403	-0.612	0.075**	0.83
	control	5-33	9.84	6.176	0.391	1.825	3.052	0.217**	0.86
Acceptance	treatment	15-105	86.42	15.130	0.967	-1.307	2.518	0.120**	0.91
	control	15-103	45.55	18.393	1.163	0.692	0.209	0.074**	0.92

z – Kolmogorov–Smirnov

**p < 0.01

Table 4. Differences in aesthetic intervention Acceptance (demographic variables)

Gender	group	t	df	Sig.
intrapersonal	treatment	-1.779	243	0.076
	control	1.798	243	0.073
consider	treatment	-1.528	243	0.128
	control	0.851	243	0.395
social	treatment	0.735	243	0.464
	control	1.112	243	0.267
Acceptance	treatment	-0.744	243	0.458
	control	1.453	243	0.148
Education	group	F	df	Sig.
intrapersonal	treatment	0.339	2, 246	0.713
	control	1.758	2, 246	0.175
consider	treatment	1.808	3, 246	0.166
	control	0.187	3, 246	0.829
social	treatment	0.352	3, 246	0.704
	control	0.498	3, 246	0.609
Acceptance	treatment	0.220	3, 246	0.803
	control	0.516	3, 246	0.598
Work status		F	df	Sig.
intrapersonal	treatment	0.358	4, 245	0.783
	control	0.894	4, 245	0.468
consider	treatment	0.288	4, 245	0.834
	control	0.220	4, 245	0.927
social	treatment	0.383	4, 245	0.765
	control	0.376	4, 245	0.826
Acceptance	treatment	0.276	4, 245	0.842
	control	0.171	4, 245	0.953
Marital status		F	df	Sig.
intrapersonal	treatment	0.936	2, 246	0.424
	control	0.853	2, 246	0.466
consider	treatment	0.561	3, 246	0.641
	control	0.479	3, 246	0.698
social	treatment	0.235	3, 246	0.872
	control	0.170	3, 246	0.917
Acceptance	treatment	0.487	3, 246	0.692
	control	0.242	3, 246	0.867

Table 5. Correlation coefficients between Acceptance factors and demographic variables

		intrapersonal	consider	social	Acceptance
Age	treatment	r = 0.015, p = 0.810	r = -0.075, p = 0.242	r = -0.073, p = 0.254	r = -0.058, p = 0.362
	control	r = 0.100, p = 0.116	r = -0.056, p = 0.378	r = 0.050, p = 0.436	r = 0.031, p = 0.621
Body mass index	treatment	r = -0.092, p = 0.215	r = -0.087, p = 0.239	r = -0.053, p = 0.471	r = -0.087, p = 0.241
	control	r = -0.020, p = 0.804	r = -0.089, p = 0.264	r = -0.040, p = 0.622	r = -0.062, p = 0.438
Number of children	treatment	r = 0.060, p = 0.347	r = 0.024, p = 0.706	r = 0.084, p = 0.190	r = 0.069, p = 0.282
	control	r = 0.105, p = 0.100	r = 0.000, p = 0.996	r = 0.052, p = 0.414	r = 0.059, p = 0.357
Economic status	treatment	r = 0.074, p = 0.246	r = 0.083, p = 0.198	r = 0.054, p = 0.397	r = 0.080, p = 0.212
	control	r = 0.054, p = 0.398	r = 0.008, p = 0.903	r = -0.002, p = 0.969	r = 0.024, p = 0.711

Figure 1. Three-factor model of the scale (for both groups)

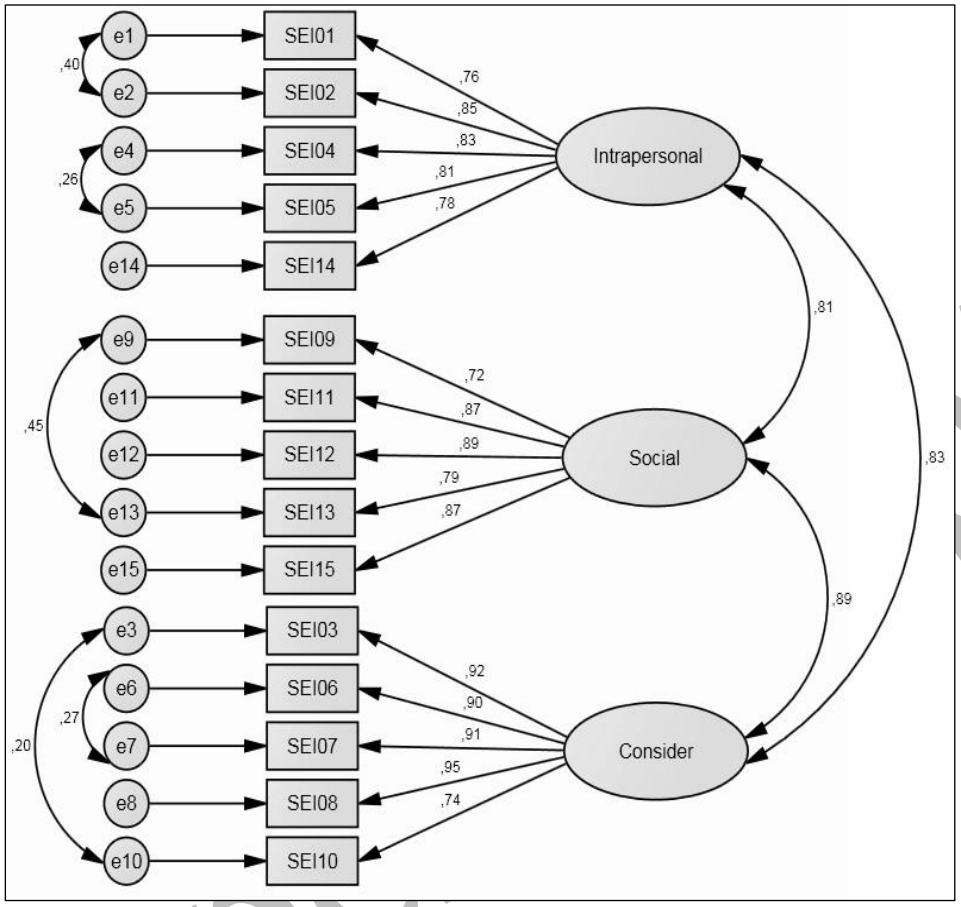

Figure 2. An example of the score distribution (intrapersonal factor)