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Polish version of *the Inventory of Complicated Grief* – preliminary validation

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Summary

Aim. The purpose of the following study was to verify the psychometric properties of the Polish version of the Inventory of Complicated Grief.

Method. 278 people who experienced loss of a close relative or a friend participated in the research on adaptation of the tool. The following research methods were applied: ICG (Inventory of Complicated Grief), BDI (Beck Depression Inventory), STAI (State-Trait Anxiety Inventory), IES-R (Impact of Events Scale-Revised), AHS (Adult Hope Scale), LOT-R (Life Orientation Test-Revised), GSES (General Self-Efficacy Scale), MSTAT-2 (Multiple Stimulus Types Ambiguity Tolerance).

Results. The statistical analyses conducted as part of the research prove the Polish version of the ICG to be a reliable and valid tool (Cronbach's $\alpha = 0.941$). A moderate positive correlation was noted between the overall ICG score and depression ($r = 0.50$; $p < 0.001$), post-traumatic stress disorder ($r = 0.67$; $p < 0.001$) and trait anxiety ($r = 0.59$; $p < 0.001$). The general ICG results also display negative correlation between variables related to positive expectations of the future: optimism ($r = -0.37$; $p < 0.001$), hope for success ($r = -0.19$; $p = 0.001$), general self-efficacy ($r = -0.27$; $p < 0.001$), and ambiguity tolerance ($r = -0.27$; $p < 0.001$). The conducted confirmatory factor analysis (CFA) revealed that the one-factor model of the Polish version of the Inventory of Complicated Grief can be considered well-fitted to the data (correlation of measurement errors was allowed).

Conclusions. Preliminary studies on the adaptation of the Polish version of the ICG prove, therefore, that it is a valid and reliable tool. However, further research is needed to help better understand the structure of complicated grief symptoms.

Key words: complicated grief, loss of the loved one, prolonged grief disorder

Introduction

Although grief is considered a natural reaction to loss, some people are unable to return to regular psychosocial functioning despite extended period of time since death

of a loved one [1]. Approximately 2–3% of people suffer from complications in the process of grieving [2]. The crux of complicated grief (CG) is chronic facing specific and intense experiences related to the death of loved ones, which cause a significant impairments in everyday functioning [3]. The intense experiences relate to such symptoms as: strong longing for the deceased rendering regular everyday functioning impossible, difficulties with accepting loss, avoiding factors associated with the loss, inability to trust other people after the death of the close person, anger and bitterness related to loss, sense of insecurity related to own identity and role (self-esteem and concept of oneself), emotional numbness, sense of shock and disbelief, feeling of emptiness and inability to see meaning of life since the death of the close person [4, 5]. It is worth highlighting that the listed symptoms are also common in acute grief period, and then they are not considered an abnormal reaction to loss. Therefore, time that passed since the death of a close person is a crucial criterion while distinguishing uncomplicated from complicated grief.

Time criterion refers to the period during which the displayed symptoms are consolidated, as well as norms for experiencing grief present in a given culture. Longitudinal study conducted by Prigerson et al. [4] among a group of 291 grievers proves that it is unwarranted to diagnose complicated grief until sixth months after the death of a close person. Such diagnosis does not allow for identification of people belonging to a risk group susceptible to long term psychosocial functioning disorders. The research also revealed that people meeting the criteria of complicated grief within the period of 6–12 months since the death of a close person, experienced a range of difficulties also at a later time: 83.3% of participants indicated low quality of life (compared with 14.7% of people not meeting the criteria of complicated grief), and 28.6% experienced mental health disorders, which were absent before (depression, post-traumatic stress disorder, generalized anxiety disorder). Therefore, Prigerson et al. [4] suggested that in order to diagnose complicated grief correctly, a complete six-month period since death of a close person needs to pass.

This criterion does not, however, include cultural and religious norms that may impact the way of experiencing loss to a high extent [6, 7]. In the first year after death of a close one, it becomes unavoidable to celebrate various family celebrations and holidays without the deceased person for the first time. Therefore, the mental condition of the grieving person may periodically worsen [8]. Expectations of rapid return to regular psychosocial functioning may lead to a sense of inadequacy of own feelings and reactions, which hinders the process of dealing with loss [9]. Therefore, it seems more justified to apply the time criterion assumed in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) that is at least 12 months since the death of a close one [6].

Among factors leading to complicated grief, it is possible to distinguish those related to the kind of loss of a loved one, as well as intra-personal risk factors related to the characteristics of the bereaved [10]. Studies conducted until now reveal that grief experienced by parents who lost a child is far more intense and persistent than

grief after loss of a spouse or a parent [11]. A significant correlate of complicated grief are negative convictions of the bereaved, which belong to intra-personal risk factors. As a result of the death of close ones, people experiencing loss may develop negative convictions about future (fear of managing to live without them). Concentrating on the past may become the means to avoid thinking of the present and the future, which is perceived pessimistically [12]. The research conducted by Boelen et al. [13] discovers that negative convictions about oneself and the future constitute essential mediators between death of a close person in traumatic circumstances (related to violence) and exacerbation of complicated grief. There is also empirical evidence for correlation between optimism and severity of complicated grief, however, longitudinal studies do not distinguish optimism as a crucial predictor of symptoms of complicated grief experienced 6, and 15 months after optimism was measured for the first time [14]. Loss of a close person is related to changes within the family system, causing sense of insecurity about the future. Therefore, the ambiguity tolerance may also play an important role in the adaptation process [15].

Maladaptation to the loss of a close person may also result in exacerbation of other mental health disorders [16]. Therefore, symptoms of complicated grief may co-occur with post-traumatic stress disorder (PTSD), depression and increased anxiety level, but they constitute a unique component and concentrate on loss of a loved one. This is proven, among others, by the research comparing a group of participants taking nortriptyline and the control group in terms of severity of depression, anxiety and complicated grief. It occurred that symptoms of depression and anxiety decreased significantly in the group receiving the antidepressant, however, symptoms of complicated grief remained unchanged and were not significantly less severe in comparison with the control group [16].

Measuring severity of complicated grief is possible thanks to widely used *Inventory of Complicated Grief* (ICG) by Prigerson et al. [16]. It comprises of 19 statements describing thoughts and feelings related to death of a close person. Next to each of them participants are required to mark on a 5-point scale (0 – never, 4 – always) how often they experience certain thoughts and feelings. Numerous contemporary studies conducted among different culture circles and age groups confirm that the ICG is reliable and valid [16–19]. Research conducted among 97 widows allowed for establishing a reliability rate (Cronbach's alpha) – which proved to be high: 0.94. The ICG correlates positively with other methods for testing grief and depression: relation with *the Beck Depression Inventory* (BDI) is $r = 0.67$ ($p < 0.001$), and with *the Texas Revised Inventory of Grief* (TRIG) – $r = 0.87$ ($p < 0.001$). Criterion validity of the inventory was also confirmed by the following observation: widows with ICG scores in the upper quartile displayed significantly greater difficulties in physical, mental and social functioning when compared to respondents with lower scores. Youth in grief score noticeably higher on the ICG than people who did not lose their close ones [17]. As shown in research conducted by Marques et al. [18] conducted among adults, grievers suffering from various anxiety disorders obtain higher results on the ICG than healthy

people. Research conducted by Carmassi et al. [19] confirm the above relation – people diagnosed with PTSD score higher on the ICG than the control group.

Italian and Korean studies of the ICG application indicate that the inventory has a single-factor structure [17, 19]. The confirmatory factor analysis conducted in the research of O'Connor et at. [20] among 292 grievers aged 60 to 81 revealed that the single-factor model is well fitted to the data. Items constituting the ICG are largely coherent with diagnostic criteria for PCBD (persistent complex bereavement-related disorder) published in the fifth edition of DSM [6]. On the basis of the obtained ICG result it is possible to recognize participants with complicated grief, therefore the tool may be useful in diagnosing this condition. The research by Prigerson et al. [16] indicates that the score equal to or higher than 25 implies that the respondent may suffer from complicated grief (upper quartile of results recorded by the team), whereas the research by Shear et al. [21] assumes the score of 30 and higher test scores. Interesting data is provided by the research by Simon et al. [22], who identified 288 people suffering from complicated grief in a group of 782 participants. They met the following criteria: voluntary search for help in dealing with the sustained loss, CG diagnosis confirmed by the clinical interview, ICG score equal to and higher than 30. The exploratory factor analysis conducted on the basis of results of people diagnosed with CG revealed a possibility to group respective statements in the ICG into six categories: (1) yearning and preoccupation with the deceased, (2) anger and bitterness, (3) shock and disbelief, (4) estrangement from others, (5) hallucinations related to the deceased, (6) changes in behavior. Sensitivity and specificity analysis revealed that presence of symptoms from first cluster (yearning and preoccupation with the deceased) and any of the remaining clusters effectively distinguishes the group of people suffering from complicated grief from healthy people [22].

Other versions of the ICG, which constitute modifications of the original inventory, were also created. Among others there is *the Inventory of Complicated Grief – Revised* (ICG-R) that consists of 15 items focusing on separation distress and traumatic distress [20].

The aim of this study is to present the Polish adaptation of *the Inventory of Complicated Grief*. Results of tests conducted among participants of Polish nationality are presented in consecutive chapters. They also contain discussion on reliability and validity indices in the context of the contemporary research results, which present relation between complicated grief and severity of other mental disorders, intra-mental risk factors and the type of loss.

Method

Participants

This research was conducted mainly in Lubelskie Voivodeship. The study participants were selected by means of non-probability sampling: previously trained volunteers recruited respondents from their places of residence based on the following

criteria: participants had to be over 18 years of age and have experience of a death of an important person (close family member, friend, other person indicated as important for the respondent) at least six months before the study. Questionnaire studies were conducted in the presence of a researcher during a previously scheduled meeting, unless the participants requested an alternative of individual completion of the questionnaires at home. 278 adults aged between 25 and 70 participated in the studies (the mean age of participants was 46.5 ± 9.3 years). Approximately 71% of respondents were female and 29% were male (Table 1). Majority of participants comprised of employed professionals with higher education. Over 60% of participants were married.

Table 1. **Demographic characteristics of participants**

Parameters	Total (n = 278)	Percentage
Gender		
Female	198	71.2
Male	80	28.8
Education		
Elementary, vocational	46	16.5
Secondary	98	35.3
Higher	134	46.4
Student	5	1.8
Career status		
Career	220	79.1
Disability benefit/ pension	32	11.5
Unemployment or other occupational situation	26	9.4
Marital status		
Single	38	13.7
Married	177	63.3
Widowed	37	13.3
Divorced	26	9.4

All people who participated in the study declared loss of a close family member (87%), friend (4.4%) or other close person (8.6%) (Table 2).

Table 2. **Person whose death was the most distressing experience to a participant**

Deceased person	Total (n = 278)	Percentage
Father	66	23.7
Mother	66	23.7
Spouse	37	13.3

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Deceased person	Total (n = 278)	Percentage
Child	14	5.1
Sibling	23	8.3
Grandparent	36	12.9
Friend	12	4.4
Other important person	24	8.6

For 47.4% of participants the death of a parent was considered the most severe loss. A little over 13% of respondents pointed to the death of a spouse as the greatest loss, whereas 5% mentioned death of their child. Average time period since the death of a close person was 8 ± 7.8 years (the time span of this period oscillated between 6 months and 39 years).

Measures

The following scales were employed in this research: ICG (*Inventory of Complicated Grief*) by Prigerson et al. [16]; IES-R (*Impact of Event Scale – Revised*) by Weiss and Marmar [23] in Polish adaptation by Juczyński and Ogińska–Bulik [24]; STAI (*State-Trait Anxiety Inventory*) by Spielberg et al. [25] in Polish adaptation by Sosnowski et al. [26]; BDI (*Beck Depression Inventory*) in Polish adaptation by Parnowski and Jernajczyk [27]; LOT-R (*Revised Life Orientation Test*) by Scheier, Carver and Bridges [28] in Polish adaptation by Poprawa and Juczyński [29]; AHS (*Adult Hope Scale*) by Snyder [30] in Polish adaptation by Łaguna et al. [31]; GSES (*General Self-Efficacy Scale*) by Jerusalem and Schwarzer [32] in Polish adaptation by Juczyński [29]; MSTAT-II (*Multiple Stimulus Types Ambiguity Tolerance Scale – II*) by Mc Lain [33] in Polish adaptation by Lachowska and Ludwikowska [34].

The IES-R is employed as means of studying severity of post-traumatic stress disorder [23, 24]. Both the original and the Polish version comprise of 22 statements describing the symptoms of stress experienced over the period of seven days preceding the test with respect to the traumatic event. Respective items refer to three dimensions related to experiencing post-traumatic stress disorder: intrusion, hyperarousal and avoidance. Assessment is based on a 5-point scale (0 – not at all, 4 – extremely). The higher the general result (sum of the three scale dimensions), the greater severity of post-traumatic stress symptoms. The original version of the scale is characterized by a satisfying internal consistency (intrusion subscale: Cronbach's $\alpha = 0.87–0.92$; avoidance subscale: Cronbach's $\alpha = 0.84–0.86$; hyperarousal subscale: Cronbach's $\alpha = 0.79–0.90$). Such consistency is also present in the Polish version of entire scale (Cronbach's $\alpha = 0.92$), as well as all the respective subscales: intrusion (Cronbach's $\alpha = 0.89$), hyperarousal (Cronbach's $\alpha = 0.85$), avoidance (Cronbach's $\alpha = 0.78$). The validity of the Polish version was verified by correlating the IES-R results with *the General Health Questionnaire* (GHQ-28) by Goldberg. The hyperarousal subscale

(IES-R) displayed positive correlation with anxiety/insomnia subscale ($r = 0.46$) and social dysfunction ($r = 0.43$) within the GHQ-28; whereas intrusion was correlated with depression ($r = 0.51$) [24].

The STAI was applied in order to test severity of anxiety [25]. The inventory consists of two subscales based on statements related to the mood of the respondents. The trait anxiety subscale contains 20 questions referring to the way participants usually feel, whereas the state anxiety subscale includes questions referring to one's mood while completing the test. Answers to the questions are given on the basis of a 4-point Likert scale (1 – almost never, 4 – almost always). The higher the result, the greater the severity of anxiety in a tested person. Both subscales in English version have a high reliability indicator (Cronbach's $\alpha = 0.95$ for state anxiety subscale, Cronbach's $\alpha = 0.93$ for trait anxiety subscale), and display positive correlation, among others, with depression ($r = 0.60$ for trait anxiety subscale, $r = 0.65$ for state anxiety subscale) [35]. The Polish version of the method is also characterized by confirmed validity and reliability (depending on the research Cronbach's α oscillates from 0.76 to 0.92) [24].

The BDI was employed in the study as means of measuring severity of depression [36]. *The Beck Depression Inventory* comprises of 21 items (symptoms) both in the original and the Polish version alike, and constitutes a 4-point scale for self-assessment of depressive disorders severity. While completing the questionnaire participants choose one out of four statements describing severity of a given symptom [37]. Severity of depression is measured by summing up all items (the higher the result, the more severe depressive disorder). The original version of the BDI constitutes a reliable tool (mean Cronbach's $\alpha = 0.86$ among psychiatric patients; mean Cronbach's $\alpha = 0.81$ among the healthy participants), and displays a positive correlation with *the Hamilton Psychiatric Rating Scale for Depression* (HRSD) (correlations: $r = 0.60$–0.74). The Polish version also has a proven validity and reliability [27].

The AHS by Snyder was applied to test hope among participants [30]. The questionnaire contains 12 statements – four items are related to agency subscale, four items to pathways subscale, and remaining four are the buffers. Respondents mark their answers on an 8-point scale, where 1 signifies a completely false statement, and 8 describes a completely true statement. The higher the general result (results from two subscales), the greater the hope level. The AHS displays an acceptable internal consistency rate in the original (Cronbach's $\alpha = 0.74$–0.84), as well as the Polish version (Cronbach's $\alpha = 0.82$), which is estimated based on research conducted among high school students and unemployed people [31]. The original scale, as well as the Polish version, display correlation with related constructs such as: basic hope, self-esteem, ability to cope with difficult situations, optimism (research among a group of the unemployed, Spearman's rho = 0.39), self-efficacy (studies among high school students, Spearman's rho = 0.36) [31].

The LOT-R by Scheier, Carver and Bridges [28] was employed in the research as means of measuring optimism. The test measures optimism understood as dispositional trait expressed as generalized expectation of positive events. The questionnaire

contains 10 statements (6 of which display diagnostic value for optimism). Answers are given according to a 5-point scale, where 0 – 'strongly disagree', 1 – 'disagree', 2 – 'neutral', 3 – 'agree', 4 – 'strongly agree'. The higher the general result, the greater the level of optimism. Reliability rate of both the original (Cronbach's $\alpha = 0.78$), and the Polish version of the test (Cronbach's $\alpha = 0.76$) is acceptable. The test displays a positive correlation with related constructs such as: self esteem measured with Rosenberg's scale ($r = 0.63$); coping with stress – especially in the context of taking action: significant positive correlation with planning factor ($r = 0.51$) and negative with stopping all actions ($r = – 0.45$). The test also displays a negative correlation with depression ($r = – 0.54$) [29].

The GSES (*General Self-Efficacy Scale*) was applied in order to test general conviction of one's own efficacy [32]. The original as well as the Polish version of the scale comprise of 10 statements, which constitute a single factor and they refer to one's conviction of an ability to take the right action in the face of difficult situations and various challenges. Answers to the questions are given according to a 4-point scale, where 1 – 'no', and 4 – 'yes'. The higher the result, the greater conviction of individual self-efficacy. Reliability of the scale is satisfying (Cronbach's α oscillates between 0.76 and 0.90 – data collected from different kinds of research conducted among multiple nationalities). Cronbach's α of the Polish version is 0.85 [29]. Construct validity of the scale was also confirmed – the study revealed a significant correlation with related constructs – internal health locus of control ($r = 0.25$), optimism ($r = 0.49$), and also general anxiety ($r = – 0.54$).

Lachowska and Ludwikowska's Polish adaptation [34] of *the Multiple Stimulus Types Ambiguity Tolerance Scale – II* (MSTAT II) [33] was applied to test tolerance to ambiguous stimuli. The scale serves as means of measuring tolerance understood as a reaction (ranging from rejection to acceptance on the continuum) to stimuli perceived as unfamiliar, complex, lacking unambiguous solutions, and leading to contradictory interpretations. The scale comprises of 14 statements; respondents determine to what degree a given statement applies to them, using a 5-point scale (1 – I strongly disagree, 5 – I strongly agree). The original version of the scale has a verified reliability (Cronbach's $\alpha = 0.79$) and validity, e.g., its positive correlation with MacDonald's AT-20 and sensation seeking was revealed. The Polish version of the scale also displays fully satisfying consistency (Cronbach's $\alpha = 0.87$) and external validity [34].

Data analysis

In order to estimate the reliability of the ICG, Cronbach's α coefficient was employed. In addition, the construct validity was verified: factor, convergent, discriminant, and criterion validity. Confirmatory factor analysis (AMOS 24 software) was conducted to establish the internal structure of the Polish version of the ICG (factor validity). Convergent validity was verified on the basis of result correlation in the ICG with results of scales measuring related constructs: depression, anxiety and PTSD. Confirmation of

discriminant validity entailed verifying the correlation between the ICG and ambiguity tolerance, as well as positive expectations of the future, which constitute a protective factor in the context of complicated grief. Tests showing differences between people who lost a child, spouse, or a parent became basis for verifying criterion validity.

Results

Descriptive statistics

Descriptive statistics and psychometric properties of the Polish adaptation of the ICG were developed based on results obtained by 278 participants who experienced death of a close person (Table 1). The general ICG result reached an average of 29 ± 16.40. Distribution of results in the Polish version of the ICG significantly differs from the normal distribution, which was revealed by the Kolmogorov-Smirnov test ($z = 0.091$; $p < 0.001$) (Figure 1).

For every statement mean and standard deviation values were calculated. In addition, a calculation of percentage of people displaying given symptoms in a clinical state was made. Proposal by Simon et al. [22] was applied to perform the aforementioned estimation –respondents who chose 'often' or 'always' were assigned to a group of grievers displaying a given symptom in clinical state (Table 3).

Table 3. **Descriptive statistics for each item in the Polish Version of the Inventory of Complicated Grief (n = 278)**

Item No.	N	%	M	SD
1. I think about this person so much that it's hard for me to do the things I normally do.	84	30	1.87	1.042
2. Memories of the person who died upset me.	48	17	1.40	1.233
3. I feel I cannot accept the death of the person who died.	72	26	1.54	1.304
4. I feel myself longing for the person who died.	191	69	2.95	.965
5. 1 feel drawn to places and things associated with the person who died.	120	43	2.26	1.170
6. I can't help feeling angry about his/her death.	71	26	1.56	1.281
7. I feel disbelief over what happened.	99	36	1.91	1.351
8. I feel stunned or dazed over what happened.	90	32	1.80	1.331
9. Ever since he/she died, it is hard for me to trust people.	35	13	0.97	1.215
10. Ever since he/she died, I feel as if I have lost the ability to care about other people or I feel distant from people I care about.	37	13	0.94	1.197
11. I have pain in the same area of my body or have some of the same symptoms as the person who died.	26	9	0.59	1.077
12. I go out of my way to avoid reminders of the person who died.	38	14	0.95	1.199
13. I feel that life is empty without the person who died.	100	36	2.02	1.270

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14. I hear the voice of the person who died speak to me.	38	14	0.91	1.234
15. I see the person who died stand before me.	38	14	0.91	1.227
16. I feel that it is unfair that I should live when this person died.	47	17	1.10	1.323
17. I feel bitter over this person's death.	119	43	2.14	1.296
18. I feel envious of others who have not lost someone close.	84	30	1.60	1.463
19. I feel lonely a great deal of the time ever since he/she died.	74	27	1.66	1.281

Majority of participants experienced strong longing for the deceased (69%). Complicated grief manifested itself in the tested group also in the form of: bitterness at the loss of close ones (43%), disbelief (36%) and shock related to their death (32%), feeling of emptiness (36%), and being drawn to things related to the deceased (43% of respondents). Lowest percentage of participants experienced strong symptoms of social isolation (loss of trust – 13%, loss of interest with other people – 13%), and psychotic symptoms (hearing the voice of the deceased – 14%, seeing the deceased – 14%).

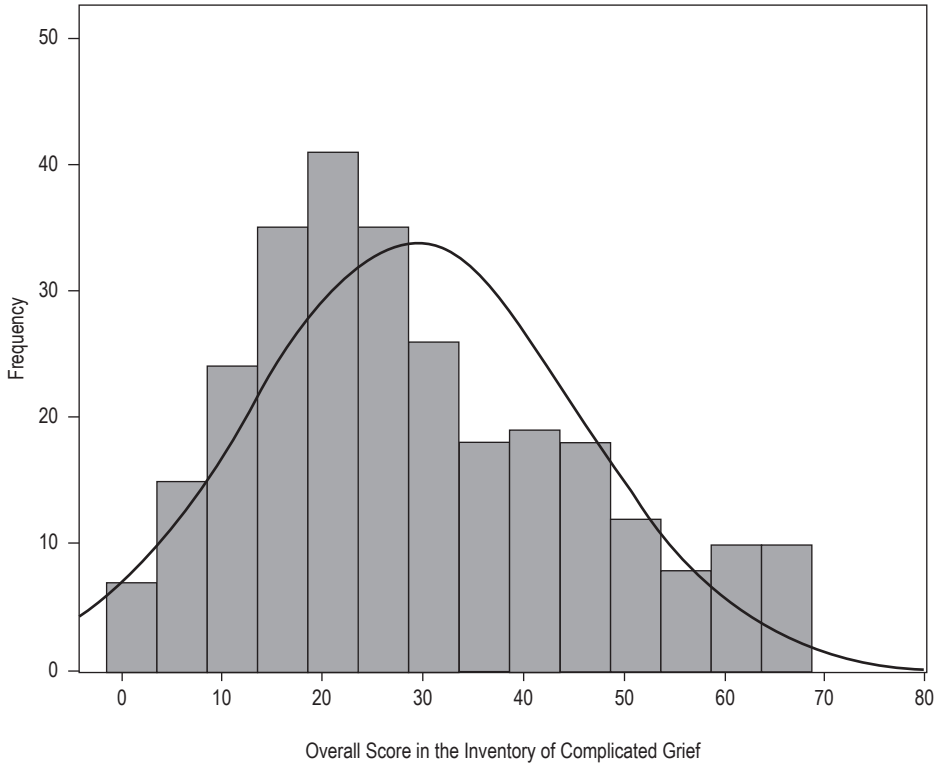

Figure 1. **Distribution of results in the Polish Version of the Inventory of Complicated Grief**

Reliability

The reliability of the test was validated through estimating the internal consistency using Cronbach's α coefficient. The value of the measure for the Polish version of the inventory is satisfying (α = 0.941) and does not increase after removing any of the statements.

Factor validity

One-factor structure of the inventory was assumed for the sake of the study. Among others the structure was validated in the Japanese and Italian research [17, 19]. Confirmatory factor analysis (CFA) was conducted in order to establish the validity of the employed one-factor structure of the validated measuring tool, when confronted with data acquired from authors' own research by means of computerized solution included in AMOS 24. The analyses were conducted in two stages. First, an assumption was made that measurement errors are uncorrelated. The obtained fit indices of the postulated model reveal its bad fit to the data. RMSEA value (RMSEA = 0.128) exceeded 0.10, therefore the model cannot be accepted [38]. SRMR index was 0.075, which does not exceed the critical value of the model acceptance set to 0.08 [39]. The remaining fit indices of the model, such as $\chi^2 = 843.92$ ($df = 152$; $p < 0.001$), $\chi^2/df = 5.55$; CFI = 0.789; TLI = 0.805, prove a bad fit to the data (assuming that there is no correlation among the measurement errors). Nevertheless, allowing correlated measurement errors may be considered factually justified thanks to statements content analysis. Consequently, common grounds for different symptom groups may be expected, which explains correlations between items measuring those symptoms. The possibility of identifying such symptom groups is confirmed by results of analyses conducted by Simon et al. [22].

Therefore, in the tested model correlation of measure errors was allowed for between statements belonging to one group of symptoms identified by Simon et al [22], based on modification indices analysis. Correlation of measure errors was allowed for between statements 4 and 13, as well as 13 and 19 (which refer to feelings associated with the absence of the deceased person); 7 and 8 (whose content is similar and related to shock and disbelief); 9 and 10 (describing relations with other people); 14 and 15 (referring to hallucinations related to the deceased); 2 and 12, as well as 5 and 12 (according to the proposition of Simon et al [22], they constitute one symptom group). Additionally, due to content resemblance, correlation between statements 4 and 5 was also allowed. Model fit indices together with correlated measurement errors display the following values: $\chi^2 = 339.87$; $df = 130$; $p < 0.001$; $\chi^2/df = 2.614$; RMSEA = 0.075(0.066–0.085); CFI = 0.931; TLI = 0.918; SRMR = 0.057. Fit indices value analysis allowed for assuming relative accuracy of the model postulating one-factor structure of the inventory. The model does, however, permit correlated measurement errors. The values of factor loadings range from 0.50 to 0.77.

Criterion validity

The Mann-Whitney *U* test revealed that people who experienced death of a spouse or a child score significantly higher on the ICG than people experiencing death of a parent ($Z = -2.643$; $p < 0.01$).

Convergent and discriminant validity

Convergent and discriminant validity was estimated by means of analyzing the correlation of the ICG with variables which (following scientific research available now) should correlate with the inventory. The conducted analyses demonstrated a moderate positive correlation of the general ICG result with depression ($r = 0.50$; $p < 0.001$), post-traumatic stress disorder ($r = 0.67$; $p < 0.001$), and trait anxiety ($r = 0.59$; $p < 0.001$). General ICG result also demonstrated a negative correlation with variables concerning positive expectations of the future: with optimism ($r = -0.37$; $p < 0.001$), hope ($r = -0.19$; $p = 0.001$) and general self-efficacy ($r = -0.27$; $p < 0.001$), as well as with ambiguity tolerance ($r = -0.27$; $p < 0.001$) (Table 4).

Discussion

The aim of the following research conducted among 278 adults was to assess the reliability and validity of the Polish version of *the Inventory of Complicated Grief*. The obtained results prove that the Polish version of the ICG is a valid and reliable tool which can be applied to estimate severity of complications in the process of grieving.

Correlation between the general ICG result and scales testing severity of depression, post-traumatic stress disorder and severity of anxiety occurred to be positive, as it was expected. Correlation ratio between complicated grief and the above constructs is moderate, which provides an argument proving that complicated grief is a unique unit, though it may co-occur with other mental disorders. This was also proven by longitudinal studies conducted by Bonanno et al. [40], where the value of depression and PTSD in explaining the psychosocial functioning was being controlled. The studies show that complicated grief uniquely contributes to the explanation of the complete variety of psychosocial functioning.

Table 4. **Descriptive statistics and correlation coefficient values between analyzed variables**

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1. Complicated grief (ICG)	29.06	16.4										
2. Post-traumatic stress disorder (IES-R)	38.56	21.83	0.67***									
3. Intrusion (IES-R subscale)	15.77	8.95	0.63***	0.95***								
4. Hyperarousal (IES-R subscale)	11.22	7.6	0.68***	0.95***	0.85***							
5. Avoidance (IES-R subscale)	11.56	6.85	0.54***	0.90***	0.76***	0.80***						
6. Depression (BDI)	9.95	8.54	0.50***	0.36***	0.35***	0.38***	0.28***					
7. Trait anxiety (STAI)	44.72	9.79	0.59***	0.47***	0.44***	0.48***	0.39***	0.70***				
8. Hope (AHS)	45.68	8.5	– 0.19**	-0.06	-0.02	0.09	-0.06	-0.37***	-0.43***			
9. Optimism (LOTR)	14.68	4.31	-0.37***	-0.28***	-0.26***	-0.29***	-0.22***	-0.53***	-0.60***	0.54***		
10. General self-efficacy (GSES)	29.19	4.55	-0.27***	-0.12*	-0.12*	-0.13*	-0.09	-0.52***	-0.49***	0.66***	0.53***	
11. Ambiguity tolerance	39.61	9.76	-0.27***	-0.25***	-0.29***	-0.24***	-0.15*	-0.33***	-0.46***	0.31***	0.30***	0.38***

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$ (two-tailed)

Long term consequences of death of a close person and its circumstances may be related to experiencing various mental health disorders. This, in turn, often leads to difficulties in differential diagnosis. Differences between complicated grief, depression and PTSD refer to affective and cognitive behavioral spheres [3]. Key indication of complicated grief is strong longing for the deceased which significantly hinders regular everyday functioning. In complicated grief other affective symptoms (e.g., sadness, guilt) are also revolving around the dead person, whereas in terms of depression they bear a more global character. In post-traumatic stress disorder, guilt (if it occurs) refers to a traumatic event and its consequences. Ruminations among people suffering from complicated grief take form of intense recurring thoughts and memories concerning the deceased. They may also display intentional character – in a sense, deliberations about the deceased become an attempt to "hold on to the one who passed away" [41]. In PTSD, ruminations constitute an important diagnostic criterion and they concentrate on the traumatic event (tragic circumstances of the death of the close person). They are often intrusive and the person who experienced the trauma tries to avoid them. If persistent thoughts occur in depression, they concern general negative convictions of one's own person, world and the future. People suffering from complicated grief often avoid stimuli confronting them with the reality and irreversibility of the experienced loss. It happens that they maintain personal belongings and the room of the deceased as if he/she was supposed to return shortly. Symptoms of avoidance in PTSD are related to loss of sense of security, and they refer to stimuli reminding the traumatic event itself (circumstances of death) [3].

As pointed out by Stroebe et al. [42], symptoms of various mental health disorders resulting from loss may not only co-occur, but mainly interfere with one another. In traumatic circumstances of losing a close person, the memories concerning the deceased can lead to intrusions of thoughts and images related to his or her death (post-traumatic stress disorder symptom). For this reason, people suffering from PTSD tend to avoid remembering the deceased, which in turn blocks the grieving process. This may result in exacerbation of complicated grief symptoms. Hence, in diagnostic and therapeutic context it is crucial to identify various co-occurring mental disorders and determine their role in grieving process.

The studies conducted to this day have proven that negative beliefs related to the past are closely associated with complicated grief [13]. As expected, the studies have shown that the higher level of optimism, hope and general conviction of self-efficacy, the milder symptoms of complicated grief. Therefore, positive convictions about the future may advocate adapting to the situation of loss. Sense of efficiency in dealing with daily challenges without the dead person as well as a positive vision of the future allow for discovering new life goals and hope. Committing to their realization can help the grieving person to concentrate less on the sustained loss. However, this argument requires confirmation in longitudinal studies. It also seems crucial for further research to focus attention on coping mechanisms that may mediate the relation between positive expectations towards the future and severity of complicated grief.

The studies by Ott et al. [43], conducted on people experiencing death of a spouse, show that in the case of sudden and unexpected death, difficulties when dealing with the loss of the loved one are substantial. Sudden death of a spouse involves chronic grief and depression. Correlation between traumatic circumstances of death of the loved one and the severity of symptoms of complicated grief is significant also in the case of other losses, e.g., loss of a child [44], as it is extremely difficult to assign a meaning to loss which happens too early, against the natural course of the world. As it was expected, the conducted research revealed that people experiencing loss of a child or a spouse develop symptoms of complicated grief in a more extensive way than those who lost their parent.

Fit indices of the single-factor model postulated by some researchers (with the assumption that measure errors are uncorrelated) [16, 17, 19] revealed that the model does not adequately reflect the structure of the ICG. The model assuming the existence of one factor in the structure of the scale allowing correlation of measurement errors can be accepted as well-suited to the data.

Conclusions

To sum up, the initial research on adaptation of the Polish version of the ICG showed that it is a valid and reliable tool. However, it is necessary to conduct further studies (in clinical groups, especially among those who look for psychological/psychiatric help when dealing with the loss of the close ones), which would help to better understand the structure of the symptoms of complicated grief and perform standardization of the presented research method.

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