THE GROUP CLIMATE QUESTIONNAIRE: ADAPTATION AND PSYCHOMETRIC PROPERTIES OF THE TURKISH VERSION

GRUP ORTAMI ANKETİ: TÜRKÇE VERSİYONUN ADAPTASYONU VE PSİKOMETRİK ÖZELLİKLERİ

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Abstract

The Group Climate Questionnaire-Short Form (GCQ) has been the most frequently used instrument in the group psychotherapy research. The GCQ measures group members' perceptions of the group's therapeutic environment. This study translated the GCQ into Turkish and adapted it into Turkish culture. Fifty psychotherapists joined a four-day training on group psychotherapy. Factor structure was analyzed by employing Principal Component and Confirmatory Factor Analyses. Psychometric properties including reliability, validity, and factor structure of the GCQ indicated a three factor structure including Engagement, Conflict, and Avoidance. The data fit the model best without including Item 8 under the Engagement subscale. Cronbach alpha levels were .78 (Conflict), .73 (Engagement), and .59 (Avoidance). Construct validity was established using the Multidimensional Relationship Questionnaire. Turkish adaptation of the GCQ has shown valid and reliable results. The GCQ-Turkish had three factors, similar to the original version. Psychometric properties were discussed with comparison to the previous studies which utilized the GCQ.

Keywords. Group Climate Questionnaire, questionnaire, engagement, avoidance, conflict, group psychotherapy, Turkish.

Öz

Grup Ortamı Anketi (GCQ) grup psikoterapisi araştırmalarında en çok kullanılan ankettir. GCQ, grup üyelerinin grubun terapötik ortamı hakkındaki algılarını ölçer. GCQ'nun Yükümlülük Alma, Çatışma ve Kaçınma'dan oluşan üç alt boyutu bulunmaktadır. Bu çalışmada, GCQ Türkçeye çevrilmiş ve adaptasyonu yapılmıştır. Elli psikoterapist, dört günlük grup psikoterapisi eğitimine katılmıştır. Dördüncü günün sonunda GCQ ve Çok Boyutlu İlişki Ölçeği Türkçe versiyonu uygulanmıştır. GCQ ve GCQ'nun faktör yapısı Temel Bileşenler Analizi yöntemiyle eksen döndürme tekniklerinden varimaks tekniği ve Doğrulayıcı Faktör Analizi kullanılarak incelenmiştir. Geçerlik, güvenirlik ve GCQ'nun faktör yapısı incelemeleri GCQ'nün Yükümlülük Alma, Çatışma ve Kaçınma alt faktörlerinden oluştuğunu göstermiştir. Madde 8 Yükümlülük Alma alt ölçeğinden çıkarıldığında veriler modele en iyi şekilde uymaktadır. Cronbach Alpha seviyeleri şu şekildedir: .78 (Çatışma), .73 (Yükümlülük alma) ve .59 (Kaçınma). Ölçeğin yapı geçerliği Çok Boyutlu İlişki Ölçeği Türkçe versiyonu ile korelasyonları hesaplanarak incelenmiştir. GCQ'nun Türkçe adaptasyonunun (GCQ-T) geçerliği ve güvenilirliği gösterilmiştir. GCQ-T'nin faktör yapısı ölçeğin orijinalinin faktör yapısına benzemektedir. Ölçeğin psikometrik özellikleri önceki çalışmaların bulgularıyla karşılaştırılarak tartışılmıştır.

Anahtar Kelimeler. Grup Ortamı Anketi, ölçek, yükümlülük alma, kaçınma, çatışma, grup psikoterapisi, Türkçe.

Not: The data used in this study was gathered from a larger database cited in Bilican, F. I. (2017). Psychometric Properties of the Curative Climate Questionnaire-Turkish Version. Turkish Journal of Clinical Psychiatry, 20(3), 186-196.

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Introduction

MacKenzie (1983) developed the Group Climate Questionnaire (GCQ) to assess group climate in group psychotherapy. Group climate describes a group along a series of interactional dimensions by taking into account the cognitions and behaviors of all group members (MacKenzie, 1983). It refers to group member's perceptions of the group's therapeutic environment (Johnson et al., 2006) and a sense of constructive interpersonal investigation (Johnson, Burlingame, Olsen, Davies, & Gleave, 2005). Engagement, conflict, and avoidance are the most distinct aspects of group climate and they form the subscales of the GCQ. Engagement is related to the concept of cohesion, caring about the group, self-disclosure, and having a cognitive understanding of behavior. Avoidance is related to avoidance of responsibility for one's own change process in the group, avoidance of problems, dependence on the leader, and interpersonal distance. Conflict is related to interpersonal conflict and distrust (MacKenzie, 1983). As the GCQ is the most frequently used group measure in the group psychotherapy field, its adaptation into Turkish was expected to offer a valuable tool to contribute to the group psychotherapy research in Turkey.

There are several benefits to measuring group climate in a group psychotherapy process. First, on a group level, group climate scores alert therapist to shifts in group dynamics. On an individual level, group climate scores help therapists understand the experience of individual group members, which can be helpful in targeting interventions. For example, a patient in the 'scapegoat' role might experience the group climate as more negative than the other group members; this could alert the therapist to the scapegoating process, and allow an appropriate intervention (MacKenzie, 1983).

Second, because groups can be conceptualized as social systems, group climate measurements completed by group members help to identify developmental stages of the group (MacKenzie & Livesley, 1983). For example, in Stage 1(Engagement) members tend to have high engagement scores and low avoidance and conflict scores. In Stage 1, the group deals with basic involvement issues and cannot tolerate negative interactions. At the end on Stage 1, avoidance scores tend to increase and engagement scores tend to decrease. There is an emphasis on differences during Stage 2 (Differentiation). Group members tend to experience conflict and anger as they work on establishing their individuality in the group. At Stage 2, engagement scores tend to drop, and avoidance and conflict scores tend to rise above baseline levels. Stage 3 (Individuation) is characterized by a productive state where group members work on personal issues more actively. At Stage 3, engagement scores tend to rise and avoidance and conflict scores tend to drop. Over the three stages, there tends to be an engagement/avoiding/conflict/ engagement pattern as measured by group climate measures (MacKenzie & Livesley, 1983). This developmental pattern appears to repeat regardless of the number of sessions elapsed since the onset of therapy. For example, in urban areas in Norway, short term and long term manualized psychodynamic psychotherapy was conducted among 167 patients with mood, anxiety, substance abuse, and eating disorders. A low (1st session)/ high (10thsession)/ low (18thsession) pattern for conflict and avoidance emerged in short-term therapy groups who met for 20 sessions over time as measured by the GCQ. While conflict levels decreased from the 10th to 18th session in short-term groups, conflict levels increased from 10th to 18th session in long-term therapy (80 sessions)groups. This indicated the actual stage relative to total group time duration was informative for identifying developmental stages of therapy rather than the number of sessions passed since the onset of therapy (Bakali, Wilberg, Klungsoyr, & Lorentzen, 2013).

Third, the group climate dimensions were shown to be related to change process in group psychotherapy. In therapy groups, engagement appeared to be consistently associated with good outcome at both group and individual levels. The most successful groups had moderate to high levels of engagement, with engagement tending to increase over time. (Johnson et al., 2006). Several studies showed that higher ratings of engagement were associated with reduced scores in general symptomatic complaints, interpersonal problems, specific mood symptoms, and early maladaptive schemas at one-year follow-up in a manualized, time-limited cognitive-behavioral group therapy for 27 outpatients with comorbid psychiatric disorders, (Ryum, Hagen, Nordahl, Vogel, & Stiles, 2009); improvement in social anxiety symptoms in patients who were in cognitive or interpersonal therapy for 10 weeks (Bonsaksen, Borge, & Hoffart, 2013); improvement in binge eating symtoms in patients who completed a 12-week manualized cognitive-behavioral group therapy (Castonguay, Pincus, Hines, & Agras, 1998); improved task-oriented roles and interactions and member-rated benefit in therapy among 233 adolescents who joined The Choices Independent Living Program for 8 weeks and participants' ratings of satisfaction and therapy success (Kivlighan & Tarrant, 2001). Engagement predicted clinical outcomes better than did a midgroup increase in conflict or even the average level of conflict over the lifetime of the group (Crowe& Grenyer, 2008).

On the other hand, conflict was associated with least successful groups (Crowe& Grenyer, 2008; Johnson, 2013; Johnson, Burlingame, Strauss, & Bormann, 2008; MacKenzie, Dies, Coché, Rutan, & Stone, 1987). Conflict predicted negative outcomes at the group level and had mixed outcomes at the individual level (Johnson et al., 2006). When women with obesity (N=125) joined a 24-week weight loss intervention group using cognitive-behavioral skills for weight management, greater perceived group conflict was associated with smaller weight losses and lower attendance and adherence rates (Nackers, Dubyak, Lu, Anton, Dutton, & Perr, 2015). Another study showed ratings of conflict were not related to any of the followup scores (Ryum et al., 2009).

Previous studies reported avoidance was less consistently associated with outcome (Brenjo, 2012; Johnson et al., 2006). Among individuals with binge-eating disorder, perception of group avoidance in the midphase was associated with positive therapeutic response (Castonguay, Pincus, Hines, & Agras, 1998). On the other hand, females with eating disorders in a partial hospital program for 4 months scored higher on the engagement and avoidance subscales of the GCQ compared to patients with mixed psychiatric difficulties in a psychiatric partial hospital program. Higher avoidance scores were suggested to be indicative of rigid withholding defenses and ambivalence regarding treatment (Tasca, Flynn, & Bissada, 2002).

The findings of training groups showed similar results. The data on 54 small training groups, consisting of a maximum of 12 members, was gathered during the 1982 American Group Psychotherapy Association (AGPA) Institutes. These psychodynamically oriented process groups lasted for 14 hours, in 4 sessions, over 2 days. The findings revealed that the most successful outcome groups were higher on engagement compared to less successful outcome groups. The former started in the moderate range and rose significantly to the last session. The least successful groups began with a low engagement score, which moved to only moderate by the last session. The most and least successful groups began at the same level regarding conflict but it dropped among the most successful groups significantly in the last session. The most successful groups scored significantly lower on avoidance in the first two sessions. These findings indicated that the most successful groups established a positive working atmosphere very quickly without

avoiding group work or avoiding conflict but mastering conflict by session four (MacKenzie et al., 1987). Data were again collected during the 1996 Institute of the American Group Psychotherapy Association. The findings indicated that perceptions of an emotionally engaged group with a willingness to confront conflict and perceptions of a skillful leader were significant predictors of learning about psychological group processes (Tschuschke & Greene, 2002). Eighty-four undergraduate and graduate students participated in interpersonal process groups as part of their group process class at an American Midwestern university. The groups continued between 14 sessions and 26 sessions, for 1.5 hours, twice a week. A cubic (high/low/high) pattern of engagement, a low/high/low pattern of conflict, and a quadratic pattern (low/high/low/high) of avoidance were related to therapeutic gain as measured by Target Complaints form (Kivlighan & Lilly, 1997).

This study translated and adapted the Group Climate Questionnaire (McKenzie, 1983), which is the most commonly used group process questionnaire in the group psychotherapy research (Johnson et al., 2006), into Turkish. The goal was to establish its factor structure, reliability, and validity in Turkish among therapists in Turkey. For principal component analyses, KMO value was expected to be over .60 and Barlett Spehericity test was expected to be significant. It was hypothesized that a three-factor model reflecting the Engagement, Conflict, and Avoidance subscales would provide good fit to the data, similar to the original factor structure. Coefficient alphas were expected to be over .70 for the subscales of the GCQ. Noting the discussions on the utility of including the Avoidance subscale under the GCQ and the need for further assessment of the GCQ for different types of group settings (Johnson et al., 2006), this study was also designed to contribute to research in this area. Regarding construct validity, it was expected that Relationship Preoccupation and Extreme Focus on Relationships of the Multidimensional Relationship Questionnaire (MRQ) would be positively correlated with Conflict Subscale of the GCQ; Relationship Assertiveness of the MRQ would be negatively correlated with the Avoidance Subscale of the GCQ, and Relationship Motivation and Relationship Satisfaction of the MRQ would be positively correlated with the Engagement Subscale of the GCQ.

Method

Participants

The data used in this study was collected at the end of a 4-day training on group psychotherapy. The participants were 50 psychotherapists living in Istanbul, Turkey with a mean age of 29 (*SD*=4.96), ranging from 22 to 47. Eighty-two percent were female and18% were male; 62% were single and 38% were married. The participants were clinical psychologists who had master's or doctoral level degrees in Clinical Psychology or were in training to obtain these degrees, counselors who had their doctoral level degrees in Counseling Psychology or were in training to obtain these degrees, and a psychiatric nurse who was in training for a doctoral degree. Of 72% who were students, 49% were working towards a master's degree and 51% were working towards a doctoral degree. Of all participants in training, 84% were in clinical psychology, 10% were in psychological guidance and counseling, 2% were in psychiatric nursing, and 4% in forensic psychology. Sixty-four percent had a history of previous personal individual psychotherapy. Mean years of individual psychotherapy practice experience was 3.84 (*SD*=3.63). Forty percent had provided group psychotherapy before with an average of 1.18 groups (*SD*=2.36), and a range from 0 to 12. Eighty-two percent had previous experience receiving supervision for their individual and group psychotherapy practice. Mean of number of

supervisory experience was 2.51 (*SD*=2.29), mean number of months of supervision was 16 (*SD*=15.27).

Data Collection Tools

Group Climate Questionnaire-Short Form (GCQ, McKenzie, 1983): The Group Climate Questionnaire-Short Form (GCQ), consists of 12 items and three subscales: Engagement, Avoidance, and Conflict (MacKenzie, 1983). The GCQ is rated on a seven point Likert scale ranging from 'not at all' to 'extremely'. Engagement includes a sense of caring about other group members (item 1), an attempt to understand other group members and group process (item 2), a sense of participation in the group (item 4), challenge and confrontation in the group to sort things out (item 8), and revealing sensitive information in the group (item11). Conflict includes a sense of friction and anger between members (item 6), distance (item 7), rejection and distrust (item 10), and anxiety in the group (item 12). Avoidance includes refraining from looking at important issues among group members (item 3), depending on the group leader for direction (item 5), and doing things the way that would be acceptable to thegroup (item 9). Construct validity of the GCQ has been extensively tested; the cohesive subscale (consisting of open, affectionate, helpful, enthusiastic, and meaningful) of the Group Adjectives Measure tapped onto Engagement (Kivlighan & Goldfine, 1991; MacKenzie et al., 1987). Cronbach alpha levels for the subscales of the GCQ ranged from .70 to .94 for Engagement; .36 to .92 for Avoidance; and .69 to .86 for Conflict (Bonsaksen, Lerdal, Borge, Sexton, & Hoffart, 2011; Johnson et al, 2005; Johnson et al, 2006; Kivlighan & Goldfine, 1991; Tasca et al., 2002). Even though the reliability of the Avoidance subscale is low in some studies, the literature suggests including findings of the Avoidance subscale measure, as it enables researchers to make comparisons to a large body of research which has used the GCQ.

The differences in the factor structure of the GCQ have been discussed in previous studies. Johnson et al. (2005) showed that the Conflict and Engagement subscales shared some items and the items in the Avoidance subscale failed to load together (Johnson et al., 2006). However, despite these concerns about the factor structure of the GCQ (Hurley & Brooks, 1988; Johnson et al., 2005), the GCQ is the most frequently used group climate scale and it was therefore chosen for use in this study, as it has been designated by others as the best scale to clarify the group climate literature (Johnson et al., 2006).

The Multidimensional Relationship Questionnaire (MRQ, Snell, Schicke, & Arbeiter, 2002): The MRQ was developed to measure one's psychological tendencies associated with intimate relationships. It inquires about approaches to intimate relationships from a personal standpoint. It examines one's perception of his or her own relationships from various perspectives. It has 12 subscales including Relationship Esteem, Relationship Preoccupation, Internal Relationship Control, Relationship Consciousness, Relationship Motivation, Relationship Anxiety, Relationship Assertiveness, Relationship Depression, External Relationship Control, Relationship Monitoring, Fear of Intimate Relationships, and Relationship Satisfaction. The MRQ subscales have high reliability. The Cronbach alphas ranged from a low of .68 (males), .70 (females) to a high of .92 (males) .93 (females). The test-retest reliability for the twelve MRQ subscales was r=.72 on average. Correlations between the MRQ and Hendrick's (1988) measure of relationship satisfaction established the MRQ's convergent validity.

Turkish translation and adaptation of the MRQ indicated that the Turkish version had 8 subscales including Extreme Focus on Relationships, Relationship Satisfaction, Fear of

Relationships/Relational Anxiety, Relational Monitoring, Relational Esteem, External Relational Control, Relational Assertiveness, and Internal Relational Control (Buyuksahin, 2005). The Cronbach Alpha was.81, test retest reliability coefficient was .80. The Turkish translation established criterion validity with the Relationship Assessment Scale (Hendrick, 1988). The Cronbach Alpha was .86 in this study. Since there were no questionnaires which assessed group climate in Turkish to the best of our knowledge, the MRQ was the best available questionnaire at hand to examine convergent and divergent validity of the GCQ.

Procedure

Ethical approval was obtained from the Institutional Social Sciences Review Board. The research project was announced in e-mail groups whose members included psychologists. Informed consent was obtained from all participants. The participants were provided with training, which satisfied the educational requirements to become a Certified Group Psychotherapist, as set by the International Board of Certified Group Psychotherapists (IBCGP), and also provided experiential demonstrations, including a 4 session experiential training group, a demonstration of an individual group screening session, and 3 sessions of live group supervision.

The training lasted for four days and was 30 hours in total. The GCQ was administered at the end of the fourth day of the training. The instructor who provided the training for four days was an IBCGP Certified Group Psychotherapist with a clinical psychology practice experience of over 25 years. The instructor had significant experience in providing this training worldwide. The content of the training were as follows:

● A brief history of group therapy, definition of a psychotherapy group, conceptualization of the group as asystem, types of groups, curative factors in group treatment, selection of patients, composition of groups, and preparation of patients for group (Day 1);

● From individual to socio-political levels of group dynamics, group dynamic mechanisms, issues of diversity in group therapy, and group development stages (Day 2);

● The change process in group psychotherapy, methods and strategies in group psychotherapy, focal points, curative factors, working with the difficult patients and difficult groups, and termination in group psychotherapy (Day 3);

● Qualities and basic functions of the group leader, and ethics (Day 4).

The training consisted of three main components: a. Didactic training, b. group screening or group supervision, and c. an experiential process group (either participated in or observed). Didactic topics described above were covered in the morning section of the training on four consecutive mornings. A group screening demonstration was provided on the first afternoon. At that time period on the remaining three days, a participant presented an ongoing or completed group case, which was followed by group supervision. Group screening and group supervision lasted for an hour. An experiential process group was provided during the rest of the afternoon on all four days. The process group and feedback session lasted 2 hours 15 minutes each day. The participants paid a symbolic fee around US $35 to attend the training. The participants were provided with a certificate documenting the attendance. Scholarships were awarded to some students. The participants were not compensated otherwise.

Analyses

Interrater reliability was computed as a culmination of the translation process. Interrater reliability was established on the Turkish translation of the GCQ by computing Intraclass Correlation Coefficient (ICC) Two-Way Random with Absolute Agreement to examine content validity. In order to investigate the factor structure of the GCQ, Principal Component Analysis (PCA) with varimax rotation was computed. In order to assess the fit of the data to the model, Confirmatory Factor Analyses (CFA) were computed. Even though a sample size approach to CFA aims for a larger sample size, many studies show minimum sample size approach is not valid and useful (MacCallum, Widaman, Zhang, & Hong, 1999; Preacher & MacCallum, 2002). Sample size requirement might change from 30 to 460 depending on the parameters (Wolf, Harrington, Clark, & Miller, 2013). Arrindell & Van Der Ende (1985) show that the observations to variables ratio and an absolute number of observations do not have any effect on factor stability. They suggest that sample size should be related to the number of factors drawn and their findings confirm that stable factor solutions are obtained when sample size is approximately 20 times the number of factors. Since current sample approximated this number, CFA's were computed in this study. The parameters of the model were assessed using AMOS 20. Of the goodness-of-fit indices, for RMSEA, values less than .05 indicate a good fit, values between .05 and .08 indicate a reasonable fit, and values between .08 and .10 indicate a mediocre fit. A RMSEA value above .10 indicates a poor fit. A CFI value greater than .90 indicates a good fit (Hoe, 2008; MacCallum, Browne, & Sugawara, 1996). CMIN/df ratio of 3 or less is a good indicator of model fit (Kline, 2005). A PCLOSE value greater than .05 indicates a good fit. The GFI, PGFI and PCFI values approaching to 1 indicate a good fit. The CFI, RMSEA and CMIN/df values were reported to be the key fit indices in interpreting the CFA findings (Garver & Mentzer, 1999; Hoe, 2008). Cronbach's Alpha value was computed to examine reliability of the GCQ.

Results

Translation procedure

Permission to adapt the GCQ for use in Turkey was obtained (G. Burlingame, personal communication, July 13, 2015). Guidelines for cross-cultural adaptation of self-report measures original language, English, to target language, Turkish. Two forward translations were made by the bilingual translators who were fully proficient in both languages and familiar with the cultures associated with the respective languages. Translators were fluent in the source language of the instrument and native in the target language. The first translator was the informed translator who was a clinical psychologist and was aware of the concepts being examined in the instrument. The second translator was the uninformed translator who was not aware of the concepts being examined and did not have a background in psychology. The two translators had different professional profiles. At the second stage, two translators collaboratively synthesized their initial translations. At the third stage, back translation was made. The purpose of this stage was validity checking to make sure that the translated version was reflecting the same item content as the original versions and to determine unclear wording in the translations. The two back translations were done by the third and fourth translators, who were chosen to be naive to the outcome measure. The two translators were neither aware nor informed of the concepts explored, and were without a psychology background. Back translation enabled avoiding information bias and eliciting unexpected meanings of the items in the translated questionnaire. An expert committee of four translators and two additional clinical psychologists consolidated all

versions of the instruments, reached a consensus on discrepancies and developed the final version of the instrument. Semantic, idiomatic, experiential, and conceptual equivalences were examined. At stage five, the finalversion of the instrument was administered to 6 individuals, in order to interview them about the meanings of the items and their chosen responses. This stage helps to assure that the adapted version maintains its equivalence in an applied situation (Beaton et al., 2000).

Content validity

The items were reviewed by three clinical psychologists with an average of 7 years of psychotherapy experience and different theoretical backgrounds. The reviewers identified items that would be loaded under the three factors of the instrument. The data revealed there was a perfect agreement on 8 items and there was a 67% agreement in 4 items. In order to estimate interrater reliability, Intraclass Correlation Coefficient (ICC) TwoWay Random with Absolute Agreement was computed. Interrater reliability was r=.83, p= .00, which indicated a good concurrence rate among the interraters (Landers, 2015).

Principal Component Analysis for the GCQ

In order to test for sample size sufficiency, Kaiser-Meyer-Olkin (KMO) value was computed. The KMO was .75, which indicated that distribution of values was adequate for conducting factor analysis. A significant Bartlett's test of sphericity value of 187.53 at p=.00 level indicated the data was acceptable for factor analysis (George & Mallery, 2006). The GCQ factors with Eigen values greater than 1 were considered to be significant.

PCA with varimax rotation yielded three factors with values greater than 1; these factors explained 65% of the variance. The first factor explained 38% of the variance, the second 16% of the variance, and the third factor 11% of the variance. In the initial rotation, Rotated Component Matrix showed items 12, 10, 6, 3, 7, and 9 were grouped under factor Conflict; items 1, 4, 2, and 11 were grouped under factor Engagement; and items 8 and 5 were grouped under factor Avoidance. During reliability analysis, item 8 negatively loaded on Avoidance, which violated the reliability model assumptions. Even when the item was reverse coded, it continued to violate the reliability model assumptions. Therefore, item 8 was dropped from the factor analysis. The remaining 11 items showed the same distribution underneath the three factors as observed in the original questionnaire. Final item groupings and factor loadings were shown in Table 1.

Confirmatory Factor Analysis for the GCQ

Five models were tested through CFA on SPSS AMOS 20. As shown on Table 2, the hypothesized model was tested and support was found for the hypothesized model: the fit indices were acceptable (Model 1). However, item 8 (Engagement) had a low standardized factor loading (-.09) indicating that it had low contribution to its factor (Cokluk, Sekercioglu, & Buyukozturk, 2012; Ozdamar, 2016). Item 8 had an extremely low negative communality (.008) indicating that the item did not strongly load on any of the factors (Wothke, 1993). Therefore, it was removed from the model. Without item 8, the hypothesized model was supported and the fit indices were acceptable (Model 2). Even though item 5 had a standardized factor loading of .30, the exclusion of this item led to a poorer fit, as the fit indices were not acceptable (Model 3). Therefore item 5 was included in the model. Next, because the factor structure of the Avoidance Scale has been a subject of discussion in the literature (Johnson et al., 2006), the model was tested without the Avoidance subscale. Even though the model was supported (Model 4), item 8

had a low factor loading (-.11). When item 8 was removed from the model, RMSEA value was increased and the hypothesized model was not supported (Model 5).

The best fit of the data is represented in model 2. All factors are included except item 8 under the Engagement subscale. The final model is presented in Figure 1, where the circles represent latent variables, and the rectangles represent measured variables. Fit indices values were shown on Table 2.

Table 1: *Factor loadings of the GCQ according to Principal Component Analysis*

| Factors and Items	Factor 1	Factor 2	Factor 3
The members appeared tense and anxious (item 12)	**.80**	-.09	.09
There was friction and anger between the members (item 6)	**.78**	.06	-.13
The members rejected and distrusted each other (item 10)	**.76**	-.23	.13
The members were distant and withdrawn from each other (item 7)	**.58**	-.49	.33
The members liked and cared about each other (item 1)	-.02	**.86**	.16
The members tried to understand why they do the things they do, tried to reason it out (item 2)	-.17	**.78**	-.12
The members felt what was happening was important and there was a sense of participation (item 4)	-.27	**.77**	-.29
The members revealed sensitive personal information or feelings (item 11)	.11	**.51**	-.44
The members depended on the group leader(s) for direction (item 5)	-.06	-.03	**.75**
The members avoided looking at important issues going on between themselves (item 3)	.52	-.04	**.62**
The members appeared to do things the way they thought would be acceptable to the group (item 9)	.45	-.28	**.53**
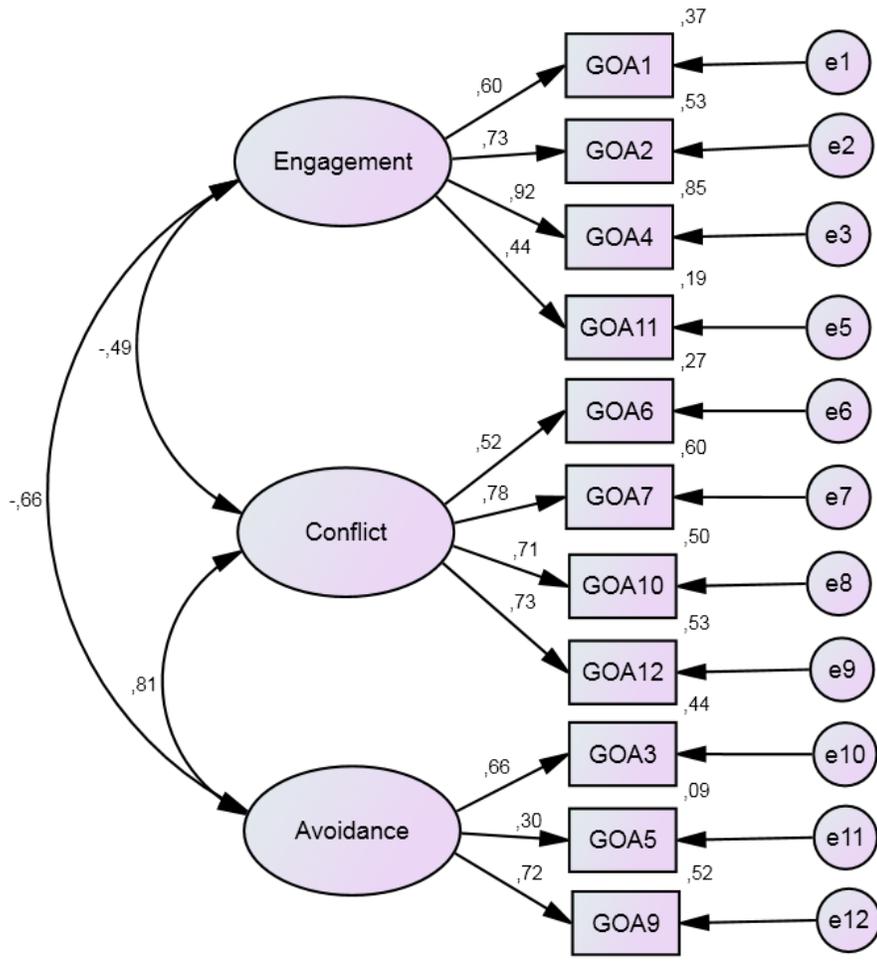
Figure 1. Confirmatory Factor Analysis of the GCQ

Table 2: *Fit Models of the GCQ according to Confirmatory Factor Analyses*

Model tested[*]	CMIN/df	Goodness of fit indices[**]					
		RMSEA	GFI	PGFI	CFI	PCFI	PCLOSE
Model 1	1.31	.08	.83	.54	.90	.70	.19
Model 2	1.39	.09	.83	.54	.90	.67	.14
Model 3	1.64	.11	.84	.49	.88	.63	.04
Model 4	1.33	.08	.86	.50	.93	.67	.23
Model 5	1.48	.10	.88	.46	.93	.63	.16

[*]$X^2 = 66,98$, p$\geq$.05, (Model 1, all items); $X^2 = 57,14$, p$\geq$.05, (Model 2, all items except item 8); $X^2 = 52,45$, p$\leq$.05, (Model 3, all items except items 8 and 5); $X^2 = 34,69$, p$\geq$.11, (Model 4, all items except items 3, 5, and 9); $X^2 = 28.02$, p$\geq$.08, (Model 5, all items except items 3, 5, 9, and 8).

Note. [**]X^2 (the fit between the hypothesized statistical model and the set of observed variables/items); CMIN/df (subsequent ratio of X^2 with degrees of freedom), RMSEA (root mean square error of approximation); GFI (goodness of fit index); PGFI (parsimony adjusted goodness of fit), CFI (comparative fit index), PCFI (parsimony adjusted comparative of fit), and PCLOSE (probability of close fit).

Table 3: *Item-Total Correlations for the GCQ Subscales*

	Item-Total Correlation
Conflict	
Item 6	.51
Item 7	.56
Item 10	.65
Item 12	.65
Engagement	
Item 1	.56
Item 2	.61
Item 4	.67
Item 11	.39
Avoidance	
Item 3	.45
Item 5	.31
Item 9	.45

Discriminant and Convergent Validity

The GCQ and MRQ subscales were correlated. The Conflict subscale of the GCQ was positively correlated with Extreme Focus on Relationships (r=.33, p=.02).

Reliability for the GCQ

During initial reliability analyses, item 8 negatively loaded on the Avoidance subscale,which violated the reliability model assumptions. Even when the item was reverse coded, it continued to violate reliability model assumptions. Therefore, item 8 was dropped from the reliability analysis. Corrected item-total correlations, which are correlations between each item and total score on the questionnaire, were reported on Table 3. The Conflict subscale consisted of 4 items (α = .78), the Engagement subscale consisted of 4 items(α = .73), and the Avoidance subscale consisted of 3 items (α = .59). Overall Cronbach Alpha level was .62.

Means of the GCQ subscales

Overall means for the GCQ subscales were as follows: Engagement 4.38 (*SD*=.76), Conflict 1.80 (*SD*=1.23), and Avoidance 2.35 (*SD*=1.13). There was no difference between males and females regarding the Engagement, $F(1, 47)= .05$, $p=.84$, ηp2 (eta squared)= .00; Conflict, $F(1, 47)= .14$, $p=.71$, ηp2=.00; or Avoidance subscale ratings, $F(1, 47)= 1.74$, $p=.19$, ηp2= .04.

Discussion

Even though studies have shown some variation in the factor structure of the GCQ (Johnson et al., 2006), it has indisputably been the most frequently used group measure in the literature. This study aimed to translate and adapt the GCQ into Turkish to enable future group psychotherapy studies to use the instrument. The GCQ was translated to Turkish according to Beaton et al. (2000)'s directions. Content validity was established by computing the Intraclass Correlation Coefficient. Factor structure was examined by PCA with varimax rotation and CFA. The Cronbach's Alpha was reported during the reliability analyses. Psychometric properties of the GCQ showed the Turkish adaptation of the GCQ had adequate validity and reliability to assess group dynamics in group psychotherapy.

The GCQ's factor structure has been tested by PCA and CFA and the findings converged. The findings revealed that the GCQ had a three-factor structure including the Engagement, Conflict, and Avoidance subscales. After removal of item 8 from the GCQ, this structure is similar to the original (English) version of the questionnaire. The PCA revealed 65% of the variance was explained by the three factors. Factor loadings of the items ranged from .51 to .86. Items 1, 2, 4, and 11 were grouped under Engagement; items 6, 7, 10, and 12 were grouped under Conflict; and items 3, 5, and 9 were grouped under Avoidance. In the original questionnaire, item 8 was grouped under Engagement. However, during the CFA item 8 had a low factor loading on Engagement and was removed, as the data best confirmed the model without including item 8 (Model 2). Previous studies also showed item 8 loaded on unexpected subscales such as Conflict, rather than Engagement (Tschuschke & Greene, 2002), or loaded on both Conflict and Engagement (Bonsaksen et al., 2013). The goodness of the fit statistics for the final model were adequate. A CMIN/df value below 3 and a CFI level of .90 indicated an acceptable model (Kline, 2005; Tabachnick & Fidell, 2007; Wheaton, Muthen, Alwin, & Summers, 1977). A cutoff RMSEA value between .08 to .10 indicated a mediocre fit and it was acceptable (MacCallum et al., 1996; Mbelwa, 2015)).

Inclusion of the Avoidance subscale of the GCQ has been both supported and challenged in various studies (Hurley and Brooks, 1987; Mackenzie et al., 1987). Johnson et al., (2005) found a two-factor model of the GCQ without Avoidance provided a good fit to the data. Johnson et al. (2006) suggested that the coherence of the Avoidance scale was still open to debate. This study supported inclusion of the Avoidance subscale in the Turkish version of the GCQ, because the model fit was poorer without this subscale.

Convergent and divergent validity were established with the MRQ. Significant correlation between the Conflict subscale and Extreme Focus on Relationships indicated that individuals who were highly focused on relationships were also more sensitive to perceiving conflicts in the group. The rest of the MRQ subscales were not significantly correlated with GCQ scales.   The reliability of the Engagement and Conflict subscales were each above .70, indicating that both scales were reliable. Even though the reliability of Avoidance was .59, this subscale was included under GCQ since it approached acceptable limits and the data fit the model better when Avoidance was included. In addition, all of the corrected item-total correlations were above .30 and all items adequately represented the subscale they belonged to. The lower reliability scores of the Avoidance subscale has also been observed in previous studies; those researchers also chose to include this subscale under the GCQ, as it allowed the researchers to make comparisons to other studies (Johnson et al., 2006).

There are some limitations to this study. First, having an experiential training group, but not an actual therapy group, limits us from generalizing the findings of this study to the clinical populations. Future studies using GCQ with clinical populations will help to validate the Turkish GCQ in clinical settings. Second, the internal consistency coefficients of the GCQ were somewhat weaker than reported in other research. This could be a function of the source of the data. Having a more traditional therapy group for longer duration rather than a brief experiential training group might increase the internal consistency coefficients of the GCQ. Third, it was a challenge to gather 50 therapists together for four days to participate in this study. Nevertheless, the sample size could have been larger. Even though there is no set minimum sample size requirement to compute CFA(Sivo, Fan, Witta, & Willse, 2006), future studies with larger sample sizes would increase statistical power for data analyses (Garver & Mentzer, 1999). Next, since there is no questionnaire which assesses group climate in Turkish, establishing convergent validity was a challenge in this study. The MRQ was the best available measure that could be used to establish convergent and divergent validity. Future studies might explore translating new group measures to re-assess the convergent validity of the GCQ. Finally, future studies might utilize the GCQ not only for clinical purposes but also to compare and contrast cultural differences, in a variety of settings, regarding approaches to conflict, avoidance, and engagement in groups.

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