Self-awareness in the training of health care professionals: Validation of a group self-awareness questionnaire among Balint groups in China

Kurt Fritzsche (kurt.fritzsche@uniklinik-freiburg.de)  
University Medical Center Freiburg

Lili Shi  
Peking Union Medical College Hospital

Jing Wei  
Peking Union Medical College Hospital

Yue Sha  
Peking Union Medical College Hospital

Yongbiao Xie  
Guangdong General Hospital

Yanling He  
Shanghai Mental Health Center

Volker Tschuschke  
Universitat zu Koln

Guido Flatten  
Universitatsklinikum Aachen

Rainer Leonhart  
Albert-Ludwigs-Universitat Freiburg Wirtschafts- und Verhaltenswissenschaftliche Fakultät

Research article

Keywords: Self-awareness, questionnaire, Balint group, validation, group leader

DOI: https://doi.org/10.21203/rs.3.rs-33641/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License. Read Full License
Abstract

Background

Group-related learning processes in relation to oneself and in interaction with others play an important role in the training of health care professionals. However, an instrument to measure self-awareness in professional groups is not yet available in China. The aim of the study is to validate a questionnaire on self-awareness processes among Balint groups in China.

Methods

After a Balint group session, the participants were asked to fill out a group self-awareness questionnaire (G-SAQ) and two internationally validated instruments to assess group therapy research, namely, the Group Climate Questionnaire (GCQ) and the Group Relationship Questionnaire (GRQ).

Results

Fully completed questionnaires from n = 650 participants were analysed. Most participants came from Beijing, Guangzhou and Shanghai; most were female; and the average age was 31.3 years old (SD 8.2). The confirmatory and exploratory factor analysis of the G-SAQ did not show good solutions. Therefore, we developed a model with only one general factor and a Cronbach's alpha = .936. Low-to-moderate correlations between the G-SAQ and the previously validated questionnaires (the GCQ and the GRQ) indicated acceptable convergent and discriminant validity. Most of the responses in terms of self-awareness ranged from “something learned” to “relatively a lot learned”. The assessment of the group leaders was correlated with the level of learning effects.

Conclusions

The Chinese version of the G-SAQ has satisfactory reliability and validity among participants of Balint groups. It could be used as a measure of self-awareness processes in the future.

Background

It is now widely accepted that self-awareness is an essential component in the training of mental health professionals, especially psychotherapists [1,2]. The basic idea of self-awareness in the context of psychotherapeutic training is based on the assumption that the participants of the training achieve an awareness of problematic and vulnerable aspects of their own self. The goal is to better cope with these problems and to have a more mature personality. Within the framework of health care professional training, trainees should feel their problems from the perspective of the patient. Self-awareness is therefore an indispensable component of the socialization process of a psychotherapist. However, all
health care professionals should have some limited self-awareness about the strengths and weaknesses of their own personalities and about unknown and rejected feelings, thoughts and behaviours when treating patients. A specific form of self-awareness takes place in a group setting. Compared to individual self-awareness, the following additional learning processes are possible in the group setting through feedback from others, also known as peer support: hearing others’ similar experiences; the discovery of one’s own blind spots in self-perception; and knowledge about unnoticed projections onto others, also known as transference learning [3].

To date, there have been few studies on group self-awareness in psychotherapeutic training, and there have been no questionnaires that assess the learning processes described above [4]. In China, self-awareness is rarely practiced among groups of mental health specialists and among other clinical staff who are confronted with mental and psychosomatic disorders and problems of patients. However, the Balint group has become very common in China in the last 10 years as a kind of patient-related self-awareness [5].

**What is a Balint Group?**

Between 1949 and 1954, Michael and Enid Balint developed the concept of the “Balint Group,” a training and research method for general practitioners.

In these groups, under the direction of a psychoanalyst, doctors discussed their cases through understanding the transference and countertransference in the doctor-patient relationship. Balint group work enables the presenting doctor to benefit from self-awareness and to learn to bear in mind not only the disease but also the patient’s personality and social system. After this work, future encounters between the patient and the doctor are more likely to proceed in a more relaxed atmosphere [6]. The success of a group depends on the group members’ willingness to be honest, respectful, and supportive of divergent opinions. The content of the group is confidential. A Balint group may meet for a 3-day Balint workshop or over the course of months or years, and group cohesion and trust develop over time.

**Balint groups and self-awareness**

The principle of group work with physicians that was developed by Balint has been used for over 50 years to sensitize physicians and other professionals regarding the importance of unconscious aspects in shaping relationships with their patients [7,8]. Despite the different objectives between patient groups working in therapy and Balint groups for health professionals, some processes are expected to similar between the two groups. In particular, the group setting and the resulting dynamics of the individual participants among themselves can be used as a central element of self-awareness and self-development, as posited in the guidelines of the American Group Psychotherapy Association (AGPA) [9]. The following effective factors from group psychotherapy can be identified [10].

**Self-disclosure:** In the context of a case presentation, very personal concerns and feelings are addressed, to which the group members can react and communicate their view of the patient or the involved doctor.
The group dynamics that are initiated by the patient case allow for a deeper reflection of the feelings and thoughts that arise during the session. From the doctor’s perspective, this can lead to an expansion of his or her perception of the patient, his or her view and experience of the patient or even a completely different image of the patient. The doctor learns to understand his or her affective reactions towards certain "patient types", especially countertransference.

**Catharsis**: Within the framework of the protected group work, the participants can allow themselves to experience the feelings and affect that they have previously fended off. These can be anger or rage towards certain patients or deep sadness and helplessness because the attending doctor can no longer see any possibilities for treatment or healing and thus feels powerlessness.

**Feedback**: Through the feedback of the group members, blind spots can be identified more easily. The physician learns to deal carefully with unloved or hidden sides of his or her own problems. However, the group also offers a new understanding for trying out new behaviours in the protected space of the group, e.g., modified Balint work in the form of roleplaying or a sculpture. In this way, the new experience can help doctors behave differently in connection with others.

**The personality of the group leader**

The personality of the group leader is also an important variable for the group process in Balint work. Learning processes within Balint groups are dependent on the experience of the group leader, as is the case in other self-awareness groups [11,12]. The group participants need the group leader to be a therapeutic model. If the group leader is rejected, little benefit is derived from the Balint group. On the other hand, a group leader who is perceived as helpful and competent seems to provide a foundation for dynamic-interactive group processes to take place [13].

**Balint work in China**

During the past ten years, the quality of the doctor-patient relationship in China has steadily deteriorated. Patients and doctors mistrust each other greatly. Continuing violent attacks by disgruntled patients against doctors and hospital staff are now routine events. Hospitals in China and the medical profession are regarded as life-threatening. Medical students are reluctant to become doctors [14-16]. Approximately 500,000 recently trained young doctors have not worked as doctors in the last five years. The misunderstandings and mistrust between doctors and patients are influenced by social, cultural and economic factors.

What is especially important for Balint work is that doctor-to-patient communication is poor. Doctors have no specific training in conversation, and their consultations last three minutes on average for 70-100 patients per day. This results in increasingly frustrating experiences for patients and their families.

Balint group work was already part of the EU project *Postgraduate training in psychosocial medicine for medical doctors in China, Vietnam and Laos* [17]. Between 2005 and 2008, hundreds of Chinese doctors participated in this training. This training programme largely corresponds to basic psychosomatic care in
Germany and includes participation in Balint groups. It soon became apparent that Chinese doctors greatly appreciate Balint group work. During and after the Asia-Link programme, doctors began to conduct their own Balint groups in their hospitals. Balint groups are now widespread across China and are well received.

Research on Balint group work in China is new. There are no validated instruments in Chinese for the investigation of self-awareness processes among Balint groups.

Research questions

1. Is the Group Self-Awareness Questionnaire (G-SAQ) a reliable and valid instrument to measure self-awareness processes in the context of Balint groups in China?
2. Which dimensions of self-awareness are reported by the participants of the Balint groups?
3. Are there associations between the group leadership and learning effects of the participants?

Methods

Measures

Following a Balint group session, the participants were asked to fill out the Group Self-Awareness Questionnaire (G-SAQ) [18] and two internationally validated instruments: the Group Climate Questionnaire (GCQ) [19,20] and the Group Relationship Questionnaire (GRQ) [21]. Furthermore, sociodemographic data of the participants and information about their previous experiences with Balint work were collected. The research took place from May 2016 through May 2017. The questionnaires were mostly distributed during 2-day Balint groups in Beijing, Guangzhou, Shanghai and Hangzhou. The participants answered questions related to the current Balint group session.

The Group Self-Awareness Questionnaire (G-SAQ)

The G-SAQ was used because all other group questionnaires represent patient questionnaires. The questionnaire consists of 14 items plus one additional item: "The group leader was helpful for me". The questions are composed of items from previously validated group questionnaires, namely, the Düsseldorfer Wirkfaktorenbogen [22] (items 5, 6, 7, 10, 12 and 13), the Learning Evaluation Form on group self-awareness [23] (items 2, 3, 4 and 8) and the Gruppenerfahrungsbogen (GEB) [24] (items 1, 9 and 11), as well as one newly constructed item (item 14: "...I have not previously been consciously aware of inappropriate attitudes and convictions and they have now become clear").

The G-SAQ assesses group self-awareness processes in psychotherapeutic training. The participants described the learning effects with regard to perceptions of themselves (N = 6 items) and the new experiences with regard to interactions with others (N = 7 items). The questionnaire includes the following dimensions:

- The discovery of the self (4, 6, 9, 11),
- Interactions with others (3, 5, 7, 8, 12)
- Discovering one's own blind spots in self-perception through feedback from others (1, 4, 5, 13)
- Insights into unnoticed aspects of one's own social relationship life in the sense of unnoticed projections on others (10, 14)
- Effects on my professional work (2)

On the basis of a sample of 335 group participants (physicians and psychologists in training to become behavioural therapists) from 47 self-awareness groups led by 8 different group leaders, a 3-factor solution that explained 60.3% of the variance was developed by factor analysis (principal component analysis with subsequent varimax rotation) [18]. Three scales were distinguished:

Scale 1: "self-knowledge" with Cronbach's alpha = 0.90

Scale 2: "transfer learning" with Cronbach's Alpha = 0.75

Scale 3: “feedback learning” with Cronbach’s alpha = 0.69

The item-total correlations, i.e., the correlation of the single questions with the corresponding scale without the item, of all items were between 0.45 and 0.78. The scales correlated with each other with (0.63, 0.51 and 0.36).

**Group Climate Questionnaire**

The Group Climate Questionnaire-Short Form (GCQ; [19,20]) is a self-report measure that assesses individual group members’ perceptions of the group’s emotional climate. It consists of 12 items using a seven-point Likert scale ranging from not at all (0) to extremely (6). The GCQ yields three scales derived via factor analysis: *engagement*, which indicates a positive working group atmosphere and group cohesion; *conflict*, which reflects anger and tension in the group; and *avoidance*, which describes behaviours indicating the avoidance of personal responsibility of group work by members.

According to McClendon and Burlingame [25], the GCQ is the most commonly used measure of group climate, and there are a large number of studies supporting its validity. Although several studies on group processes found the avoidance subscale to be psychometrically problematic, the GCQ remains one of the most commonly used measures in group research [26].

**Group Relationship Questionnaire**

The Group Relationship Questionnaire (GRQ) [21,27,28] consists of 15 adjective pairs that are used to assess the three dimensions of *emotional relatedness* (e.g., safe—vulnerable, understood—misunderstood), *activity* (e.g., spontaneous—hesitating, thoughtful—lively) and *safety* (e.g., safe – vulnerable, comfortable – uncomfortable)
on the individual level for each patient. The *emotional relatedness* subscale represents the level of emotional belongingness to the other group members, the therapist, and the group. Low scores on this scale correspond to a higher degree of isolation. The *activity* subscale represents the subjective level of engagement and activity of a group member during a session. It has been shown to be associated with a higher participation rate and higher levels of self-disclosure [29]. High values on the *safety* subscale correspond to a feeling of security among the participants.

Translation procedure

The questionnaires were translated and back-translated into Mandarin Chinese according to a state-of-the-art translation procedure in accordance with the “ITC-Test Adaptation Guidelines” of the International Test Commission [30]. First, two trilingual (Chinese, English, German) Chinese medical students and one trilingual Chinese physician independently translated the German version of the G-SAQ and the English version of the GRQ and the GCQ into Simplified Mandarin Chinese. Through the comparison and discussion of the three Chinese versions of the questionnaire, a final version of the questionnaire in Chinese was developed.

Thereafter, the Chinese draft of the G-SAQ was blindly back-translated into German by a native German speaker with a Bachelor’s degree in Sinology, while the Chinese draft of the GRQ and the GCQ were blind back-translated into English by a native English speaker who is fluent in Chinese and holds a master’s degree from a Chinese university. These back-translated versions of the questionnaires were reviewed by a bilingual (German and English) professor of psychosomatic medicine in comparison with the original version.

In cases of ambiguity, some words and sentences were modified in Chinese by the three original Chinese translators. The second Chinese version was once again back-translated and reviewed until the back-translation was equivalent in meaning to the original version. Finally, the final Chinese version was used for this research.

Statistic procedures

Using IBM SPSS (26.0) and MPlus 8.4 software, the data were analysed with confirmatory and exploratory factor analyses (CFA). Because of non-normally distributed items, the analyses were conducted with the robust mean and variance adjusted weighted least squares (WLSMV) estimator. The variables of all questionnaires were assumed to be categorical and ordered. Categorical variables are presented as absolute and relative frequencies. Continuous data are presented as the means and standard deviations. Cronbach's alpha was calculated to assess reliability, and validity was investigated using a stepwise linear regression. A p-value of less than 0.05 (2-tailed) was considered significant.

Results
A total of 650 questionnaires were analysed. There were only a few missing responses within the G-SAQ (max. 7, 1.1% in item 15). Therefore, we did not use an imputation procedure within the data analysis. Two missing items within the G-SAQ were allowed when calculating a scale value.

Most participants came from Beijing and Guangzhou; most were female; and the average age was 30.8 years old (SD 8.2, N = 577). A total of 56.1% were doctors, 22.6% were medical students, 12.4% were nurses, 7.1% were psychologists, 0.2% were social workers, and 3.8% had other occupations (multiple selection was possible). They had participated in Balint groups an average of 3.7 times (SD 9.85). Sixty percent of participants participated in a Balint group for the first time at a Balint conference. Most participants completed the questionnaire on the second day of the Balint conference. At that point, they had already participated in two small group sessions and one large group session.

Results of the confirmatory factor analysis and the exploratory factor analysis of the G-SAQ

We tested the given structure of the G-SAQ with a confirmatory factor analysis. The fit indices were as follows: Chi-Square Test of Model Fit = 336.467 (df = 41, p < .001); RMSEA (root mean square error of approximation) = 0.105; CFI = 0.936; TLI = 0.914; SRMR (Standardized Root Mean Square Residual) = 0.041. This shows an acceptable but not a truly good fit. The biggest problem with this result is the very high correlations between the factors. Scale 1 correlates with scale 2 about $r = 0.964$ (p < .001), while the correction of scale 1 with scale 3 is about $r = 0.920$ (p < .001). The correlation between scale 2 and scale 3 with $r = 0.817$ (p < .001) seems to be “low” but is still too high for different constructs.

Therefore, we performed an exploratory factor analysis with all variables of the questionnaire (without questions 2 and 15). The eigenvalue for the first (general) factor was 7.545, and that for the second factor was 0.976. A two-factor model would still have highly correlated factors ($r = 0.761$, p < .001) and some double loadings. Therefore, we defined a model with only one general factor for this questionnaire by using all items except items 2 and 15. The resulting new scale has a mean of 3.40 (SD = 0.93) with Cronbach’s alpha = .940.

Validity

Previously validated scales were used to test the construct validity of the Chinese version of the G-SAQ. The G-SAQ general factor shows small-to-moderate correlations with the engagement ($r = .421$) and avoiding subscales ($r = .321$) of the GCQ and with the emotional relatedness ($r = .242$) and activity subscales ($r = .104$) of the GRQ. No significant correlations were found for the “safety” subscale of the GRQ and the conflict subscale of the GCQ (see Table 1).

Insert table 1 here.

The engagement subscale of the GCQ describes constructive therapeutic work, including a positive working atmosphere (item 1), cognitive understanding (item 2), group cohesion (item 4), and self-
disclosure (item 11). Among all six subscales, the engagement subscale shows the highest correlation with the G-SAQ general factor and confirms the overall positive learning effect.

The emotional relatedness and activity subscales of the GRQ represent the level of emotional belongingness to the other group members, the therapist, and the group and the level of engagement and activity of a group member during a session. These subscales also show a positive correlation with the G-SAQ general factor but not as high as the correlation between the engagement subscale of the GCQ and the G-SAQ general factor (see Table 1). In general, the results supported the convergent validity of the G-SAQ.

In a linear regression with the general factor as the dependent variable, only a moderate amount of variance is explained, i.e., 24.7% ($R^2 = .0247$) (see Table 2). This indicates that the G-SAQ measures a different construct than the other two questionnaires.

Insert table 2 here

**Results of the individual items of the G-SAQ**

Most responses ranged from three (something learned) to four (relatively a lot learned). Items 3 (“... I am now more aware of how others are doing”), item 1 (“... I have learned something for myself from other group members”) and the assessment about the helpfulness of the group leader received the highest ratings (see Table 3).

Insert table 3 here

**Associations between the group leadership and learning effects of the participants**

Item 15 (“The group leader was helpful for me”) of the G-SAQ was strongly correlated with the G-SAQ general factor ($r = .700, p < .001, N = 643$).

**Discussion**

**Reliability**

A general factor model proved to be the best solution for the G-SAQ. From the perspective of factor analysis, the results of this study support the conclusion that the subscales are highly correlated with each other and difficult to separate in our sample. The satisfactory fit of the general factor model justified the use of a general G-SAQ sum score for further analyses. The reliability was good (Cronbach’s alpha = .940).

**Validity**
The G-SAQ was expected to be moderately associated with emotional relatedness, activity and engagement, which was confirmed for emotional relatedness and engagement, but not for the activity subscale. The weak correlation with activity as well as the higher correlation with the avoidance subscale of the GCQ can be explained by the large number of inexperienced participants. These “members avoided looking at important issues going on between themselves” (Item 3), “depended on the group leader for direction” (Item 7) and “appeared to do things the way they thought would be acceptable to the group” (Item 9). Higher values on the activity subscale represent high levels of participation and a high level of self-disclosure, what would be unexpected findings.

The low correlations with other scales and the low explanation of variance in regression analysis indicate that the constructs measured by the G-SAQ are different from the constructs measured by the GCQ and the GRQ.

**Results of the self-awareness processes**

Although most of the participants in the study were beginners, the learning successes are pronounced in terms of self-perception and feedback from others. The good results may also be explained by social desirability. This explains the differences between the items and may explain the high correlations between the subscales in factor analysis.

A glance at the literature shows that similar learning outcomes are described in earlier quantitative and qualitative studies of Balint groups. Some quantitative studies found an increase in psychosocial self-efficacy, but some studies found these findings only after long-term participation [31–33]. However, the sample sizes were small and not representative.

A large quantitative German study with 1635 participants investigated self-awareness processes in a sample of medical doctors in Balint groups. The results highlighted that Balint group work is highly associated with personal gains in self-awareness and learning processes related to transference and feedback in group work. Notably, one-third of all participants has more than two years of experience with Balint group work [34].

Some qualitative studies describe the following self-awareness processes: a general maturation in participants’ defence mechanisms [35, 36], “knowledge of one’s own limits” and “minimal interference of one’s own psychopathology” [37], awareness of one’s own and patients’ feelings [38], interacting with patients differently, meeting other perspectives [39], and individual change in some participants’ approach towards the group and the patients [35]. One limitation is that these are interview data from a small sample of participants (N = 3 to 16).

**Group leadership and learning effects of the participants**

The importance of group leadership for the learning processes with regard to self-perception and the perception of others is indicated by the high positive correlation between the question of how helpful the group leadership was and the individual items of the questionnaire. In a large quantitative study of the
German Balint Society, group leadership had an impact on the learning effects of participants of Balint groups [40]. Effective learning processes in Balint groups are strongly related not only to the method itself but also to the personality of the group leader. Standards for the leadership of Balint groups are available [41, 42]. Guidance for the training of Balint group leaders includes creating a safe environment; protecting the presenting colleague from questioning; encouraging the open expression of thoughts, fantasies and physical reactions; avoiding premature and hasty conclusions; enduring silence and uncertainty; and supporting a new way of looking at the doctor-patient relationship.

Limitations

The results are representative of participants after 2–3 Balint group sessions. No statements can be made about the self-awareness processes in a continuous Balint group across months. It is unclear whether these results are generalizable to self-awareness processes in other Balint groups, at other institutions and with a different composition of participants. However, it can already be assumed that the results are not specific to the sample that has now been investigated. The selected items are all based on previously validated group questionnaires, which have been used in different therapeutic and self-awareness groups with different theoretical-conceptual approaches. The results are also consistent with the existing literature.

The questionnaire was developed for participants of a self-awareness group in psychotherapeutic training. For the further development of the questionnaire, it would be useful to focus more clearly on patient-centred self-awareness. For this purpose, the items with "others" would have to be replaced by "patients". This also applies to the use in other settings with a different background of healthcare professionals.

Conclusions

The Chinese version of the G-SAQ has satisfactory reliability and validity among participants of Balint groups. It could be used as a tool to measure self-awareness processes in the future. The questionnaire warrants further testing in both research and clinical situations. Future research should examine the associations between self-awareness and the quality of the doctor-patient relationship, the development of learning success in terms of self-awareness through continuous participation in a Balint group over months and years, and the associations between learning effects on self-awareness and on the competence of the group leader.

Declarations

Ethics approval and consent to participate

The study was approved by the institutional review board of Peking Union Medical College Hospital registered under the number S-K 500 and the institutional review board of the University of Freiburg registered under the number 62/18. Written informed consent was obtained from all participants.
**Availability of data and materials**

The datasets used and analysed during the current study are available from the corresponding author on reasonable request.

**Competing interests**

The authors declare that they have no competing interests.

**Funding**

All sources of funding for the research reported should be declared. The role of the funding body in the design of the study and collection, analysis, and interpretation of data and in writing the manuscript should be declared.

**Authors' contributions**

KF has made substantial contribution to conception, design, analysis, interpretation of data and drafted the manuscript.

LS was the project leader; she was responsible for the organisation of data collection and helped to draft the manuscript.

JW made substantial contribution to conception and design, and was involved as a supervisor.

YS had made substantial contribution to conception, design and data collection.

YB has made substantial contribution to conception, design and data collection.

YH has been involved in drafting the manuscript and revising it critical for important intellectual contents.

VZ participated in its design and helped to draft the manuscript.

GF participated in its design and helped to draft the manuscript.

RL participated in the design of the study and performed the statistical analysis.

All authors read and improved the final manuscript.

**Acknowledgements**

The authors thank all the participants involved in this study for their cooperation and support. We also would like to thank Johanna Löhlein and Anne-Maria Müller from the Sino-German Alumni Network in Psychosomatic Medicine and Psychotherapy for the critical revision of the first draft.
We are very grateful to the Chinese team that worked on this study: Sheng Li from Beijing United Family Hospital, Wang Yibo from Shanghai Ninth People's Hospital, Huangpu Branch Hospital and Yao Linyan from Sir Run Shaw Hospital, Hangzhou made substantial contributions to the study conception and design and to data acquisition.

We thank American Journal Experts for proofreading the manuscript.

References

[1] Geller JD, Norcross JC, Orlinsky DE. The Psychotherapist's Own Psychotherapy – Patient and Clinicial Perspectives. New York: Oxford University Press; 2005.

[2] Oden KA, Miner-Holden J, Balkin R. Required counseling for mental health Professional trainees: Its perceived effect on self-awareness and other potential benefits. J Ment Health. 2009;18(5):441-8.

[3] Yalom ID, Leszcz M. The Theory and Practice of Group Therapy. 5th ed. New York: Basic Books; 2006.

[4] Pieterse AL, Lee M, Ritmeester A, Collins NM. Towards a model of self-awareness development for counselling and psychotherapy training. Couns Psychol Q. 2013;26(2):190-207. doi: 10.1080/09515070.2013.793451.

[5] Wei J, Otten H, Sullivan L, Lovell Simons L, Graneck-Catarivas M, Fritzche K. Improving the doctor-patient-relationship in China: The role of Balintgroups. Int J Psychiatry Med. 2013;46:417-27.

[6] Salinsky J. The Balint movement worldwide: Present state and future outlook: A brief history of Balint around the world. Am J Psychoanal 2002;62:327-335.

[7] Balint M, Balint E. Psychotherapeutic techniques in medicine: Mind and Medicine. London: Tavistock; 1961.

[8] Rabin S, Maoz B, Shorer Y, et al. Balint groups as 'shared care' in the area of mental health in primary medicine. Ment Health Fam Med. 2009;6:139–43.

[9] Leszcz M, Kobos JC. Evidence-based group psychotherapy: using AGPA's practice guidelines to enhance clinical effectiveness. J Clin Psychol. 2008;64:1238–60.

[10] Tschuschke V. Therapeutic factors in group work and their significance for Balint groups. Ärztliche Psychotherapie. 2016;11:13-7 (In German).
[11] Tschuschke V. On the importance of group leaders in further training in group psychotherapy. Psychotherapeut. 2002;47:204–13 (In German).

[12] Tschuschke V, Greene LR. Group therapist’s learning: What predicts learning? Int J Group Psychother. 2002;52:463–82.

[13] Tschuschke V, Flatten G. The effect of group leaders on doctors learning in Balint groups. Int J Psychiatry Med. 2018;54:83–9.

[14] The Lancet. Editorial. Chinese doctors are under threat. Lancet. 2010;376:657.

[15] The Lancet. Editorial. Ending violence against doctors in China. Lancet 2011;379:1764.

[16] The Lancet. New Generations of Chinese doctors’ face crisis. Lancet 2012;379:1878.

[17] Fritzsche K, Scheib P, Nayong K, Wirsching M, Kuhnert A, Vongphrachanh S, et al. Results of a psychosomatic training program in China, Vietnam and Laos. BioPsychoSoc Med. 2012;6:17; doi:10.1186/1751-0759-6-17.

[18] Tschuschke V, Meier U, Theilacker M. Group self-awareness in psychotherapeutic training. Psychother J. 2011;10:253-9 (In German).

[19] MacKenzie KR. Measurement of group climate. Int J Group Psychother. 1981;31:287-95.

[20] MacKenzie KR. The clinical application of a group climate measure. In: Dies RR, MacKenzie KR, editors. Advances in group psychotherapy: Integrating research and practice. New York: International University Press; 1983. p. 159 - 170.

[21] MacKenzie KR, Tschuschke V. Relatedness, group work, and outcome in long-term inpatient psychotherapy groups. J Psychother Pract Res. 1993;2(2):147-56.

[22] Davies-Osterkamp S. The Düsseldorfer Wirkfaktorenbogen – an instrument to differentiated description of group therapies. In: Strauß B, Eckert J, Tschuschke V, editors. Methods of empirical group therapy research. Opladen: Westdeutscher Verlag;1996. p.116-23. (In German).

[23] Piper WE, Connelly JL, Salvendy JT. Variables related to reported learning in brief experiential groups held at professional meetings. Group. 1984;8:43-51.

[24] Eckert J. Gruppenerfahrungsbogen (GEB). In: Strauß B, Eckert J, Tschuschke V, editors. Methods of empirical group therapy research. Opladen: Westdeutscher Verlag;1996. p.160-71. (in German).
[25] McClendon DT, Burlingame GM. Group climate: Construct in search of clarity. In: Conyne R, editors. The Oxford handbook of group counseling. New York: Oxford University Press; 2010. p. 164–81. ISBN 978-0-19539445-0.

[26] Burlingame GM, Strauss B, Joyce A. Change mechanisms and effectiveness of small group treatments. In: Lambert MJ, editor. Bergin & Garfield’s Handbook of psychotherapy and behavior change. 6th Ed. New York: Wiley & Sons; 2013. p.640–89. ISBN: 978-1-118-03820-8.

[27] Tschuschke V. The Stuttgart Questionnaire (SB). In: Strauß B, Eckert J, Tschuschke V, editors. Methods of empirical group therapy research. Opladen: Westdeutscher Verlag;1996. p. 218-28. (In German).

[28] Ermann G. Dimensions of experience in groups. Group psychotherapy and group dynamic. 1977;11(2):106-21. (In German.)

[29] Tschuschke V, MacKenzie KR, Haaser B, Janke G. Self-disclosure, feedback, and outcome in long-term inpatient psychotherapy groups. J Psychother Pract Res. 1996;5:35-44.

[30] Hambleton RK, Merenda PF, Spielberger CD. Adapting educational and psychological tests for cross-cultural assessment. Mahwah, New Jersey London: Lawrence Erlbaum Associates; 2005.

[31] Rabinowitz S, Kushnir T, Ribak J. Developing psychosocial mindedness and sensitivity to mental-health issues among primary-care nurses using the Balint group method. Isr J Psychiatry Relat Sci. 1994;31:280–6.

[32] Rabinowitz S, Kushnir T, Ribak J. Preventing burnout: increasing professional self-efficacy in primary care nurses in a Balint Group. AAOHN J. 1996;44:28–32.

[33] Turner AL, Malm RL. A preliminary investigation of Balint and non-Balint behavioral medicine training. Fam Med. 2004;36:114–7.

[34] Flatten G, Möller H, Aden J, Tschuschke V. Designing the doctor-patient relationship. How beneficial are Balint groups and for whom? Z Psychosom Med Psychother 2017;63:267-279.

[35] Abeni MS, Magni M, Conte M, Mangiacavalli S, Pochintesta L, Vicenzi G, et al. Psychological care of caregivers, nurses and physicians: a study of a new approach. Cancer Med. 2013;3:101–10.

[36] Samuel O. How doctors learn in a Balint group. Fam Pract. 1989;6:108–13.

[37] Bacal HA. Training in psychological medicine: an attempt to assess Tavistock Clinic seminars. Psychiatry Med. 1971;2:13–22.
[38] Graham S, Gask L, Swift G, Evans M. Balint-style case discussion groups in psychiatric training: an evaluation. Acad Psychiatry. 2009;33:198–203.

[39] Musham C, Brock CD. Family practice residents’ perspectives on Balint group training: in-depth interviews with frequent and infrequent attenders. Fam Med. 1994;26:382–6.

[40] Tschuschke V, Flatten G. The effect of group leaders on doctors learning in Balint groups. Int J Psychiatry Med. 2018;54(2):83–9.

[41] Johnson A, Nease D, Milberg L, Addison R. Essential characteristics of effective balint group leadership. Fam Med. 2004;36:253–9.

[42] Elder A. Balint group leadership: Conceptual foundations and a framework for leadership development. Balint. 2017;18:6-10.

Tables
Table 1: Correlations
|                  | GRQ General factor     | GRQ Emotional Relatedness | GRQ Activity | GRQ Safety | GCQ Engagement | GCQ Conflict | GCQ Avoidance |
|------------------|------------------------|---------------------------|--------------|------------|----------------|--------------|--------------|
| **Correlation**  |                        |                           |              |            |                |              |              |
| **p (2-tailed)** |                        |                           |              |            |                |              |              |
| **N**            |                        |                           |              |            |                |              |              |
| **GRQ General factor** | 1                  |                           | .242**       | .115**     | .078           | .421**       | -.019        | .321**       |
| **GRQ Emotional Relatedness** | 1                  |                           | .515**       | .440**     | .280**         | -.145**      | .138         |
| **GRQ Activity** |                        |                           | .125**       | .113**     | -.058          | .075         |
| **GRQ Safety**   |                        |                           |              |            |                |              |              |
| **GCQ Engagement** | 1                  |                           |              |            |                | .234**       | .452         |
| **GCQ Conflict** |                        |                           |              |            |                |              |              |
| **GCQ Avoidance** | 1                    |                           |              |            |                |              |              |
Table 2: Regression on the G-SAQ general factor

| Model | B     | SE  | Beta  | t     | Sig. |
|-------|-------|-----|-------|-------|------|
| 1     | Constant | 1.790 | .140 | 12.784 | < .001 |
|       | GCQ Engaged | .456 | .038 | .435 | 11.866 | < .001 |
| 2     | Constant | 1.579 | .147 | 10.733 | < .001 |
|       | GCQ Engaged | .376 | .043 | .358 | 8.807 | < .001 |
|       | GCQ Avoiding | .147 | .035 | .169 | 4.145 | < .001 |
| 3     | Constant | 1.538 | .145 | 10.594 | < .001 |
|       | GCQ Engaged | .394 | .042 | .376 | 9.343 | < .001 |
|       | GCQ Avoiding | .193 | .036 | .222 | 5.311 | < .001 |
|       | GCQ Conflict | -.133 | .030 | -.173 | -4.510 | < .001 |
| 4     | Constant | 1.147 | .201 | 5.699 | < .001 |
|       | GCQ Engaged | .361 | .044 | .344 | 8.291 | < .001 |
|       | GCQ Avoiding | .186 | .036 | .214 | 5.135 | < .001 |
|       | GCQ Conflict | -.114 | .030 | -.148 | -3.776 | < .001 |
|       | GRQ Emotional Relatedness | .018 | .007 | .106 | 2.790 | .005 |

Note: $R^2 = .247$, adjusted $R^2 = .242$
Table 3: Items of the G-SAQ

| Item          | N   | Min. | Max. | Mean | SD  |
|---------------|-----|------|------|------|-----|
| G-SAQ Item 1  | 648 | 1    | 5    | 3.79 | 1.09|
| G-SAQ Item 2  | 645 | 1    | 5    | 3.58 | 1.16|
| G-SAQ Item 3  | 645 | 1    | 5    | 4.13 | 0.95|
| G-SAQ Item 4  | 647 | 1    | 5    | 3.51 | 1.19|
| G-SAQ Item 5  | 645 | 1    | 5    | 3.09 | 1.25|
| G-SAQ Item 6  | 647 | 1    | 5    | 3.06 | 1.32|
| G-SAQ Item 7  | 644 | 1    | 5    | 2.80 | 1.43|
| G-SAQ Item 8  | 647 | 1    | 5    | 3.46 | 1.20|
| G-SAQ Item 9  | 646 | 1    | 5    | 3.04 | 1.34|
| G-SAQ Item 10 | 644 | 1    | 5    | 3.27 | 1.25|
| G-SAQ Item 11 | 646 | 1    | 5    | 3.61 | 1.19|
| G-SAQ Item 12 | 646 | 1    | 5    | 3.38 | 1.21|
| G-SAQ Item 13 | 646 | 1    | 5    | 3.45 | 1.20|
| G-SAQ Item 14 | 646 | 1    | 5    | 3.55 | 1.20|
| G-SAQ Item 15 | 643 | 1    | 5    | 3.86 | 1.15|