

# Predictors of PTSD Treatment Effectivity in Transcultural Mental Health Care

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## Abstract

In mental health care in Western countries, ethnic minorities are confronted with different obstacles. In the current study, the most used treatments for posttraumatic stress disorder (PTSD) - prolonged exposure and eye-movement desensitization and reprocessing (EMDR) - were examined on their applicability in a transcultural mental health care context by investigating predictors of effective treatment. Based on availability in clients' records and previous research, the following predictors were investigated: cultural background (operationalized as country of origin), level of education, and the prevalence of depressive symptoms. The prevalence of psychotic symptoms had to be excluded of the logistic regression model due to statistical reasons. The analysis of 39 clients' reports ( $M_{age} = 35.13$ ,  $SD_{age} = 9.86$ ; female:  $n = 15$ ) showed that none of the predictors can predict the likelihood of effective PTSD treatment in a transcultural population. Although these results should be interpreted with care due to their statistical limitations, the results show that the general knowledge of PTSD treatment might not be transferable to ethnic minority populations. This understanding is supported by additional relevant findings: both the very few cases of effective treatment at all (18% of all cases), as the high drop-out rate (46% of all cases), indicate that the standard EMDR and exposure therapy might not be fitting approaches of PTSD treatment in transcultural mental health care.

Mental health care in Western countries, commonly considered to comprise European and North American countries, is facing a growing need for stronger consideration of a patient's cultural background in trauma-related psychopathology. Traumatic experiences are perceived within a cultural context and cultural factors influence an individual's reaction to these experiences (Zayfert, 2008). Although both the basic concept of trauma as well as the main symptoms of posttraumatic stress disorder (PTSD) are currently accepted to be universal to all humans, there has been a growing acknowledgment of cultural and societal influences. The basic symptoms may be comparable, but the cultural context forms the way in which reality is perceived – in everyday life and thus also in traumatic surroundings (Marsella, 2010). When an individual's perception and understanding of the traumatic situation is shaped by the cultural context, cultural determinants eventually lead to differences in PTSD related aspects, for example the patterns of onset, the manifestations, the course and the treatment outcomes. The main treatment approaches of PTSD have been shaped by Western societies, which can limit the applicability of treatment for individuals with a non-Western background (Marsella, 2010). Although non-Western ethnic groups might face several challenges in Western mental health

care due to their minority status, social and political factors do not explain all differences in PTSD prevalence, supporting the importance of the cultural context (Perilla, Norris & Lavizzo, 2002). To address this gap in PTSD knowledge, a more culturally shaped approach might be needed.

Incorporating cultural factors into PTSD treatment can help to administer treatment in a more culturally sensitive manner. Two of the most used treatments for PTSD are cognitive behavioral therapy, especially exposure therapy, and eye movement desensitization and reprocessing (EMDR) (Olf, 2015). These treatments may need to be adjusted for individuals with diverse cultural backgrounds. For an adapted treatment of PTSD, it may be necessary to engage individuals into already existing interventions, while also focusing on their specific culturally shaped expression of symptoms (Zayfert, 2008).

In general, various meta-analyses revealed that the use of culturally adapted treatments leads to superior treatment outcome for clients from diverse ethnic minority populations. This applies to different settings such as group therapy (Griner & Smith, 2006), psychotherapy (Benish, Quintana & Wampold, 2011), and treatment of depression and anxiety (van Loon, van Schaik, Dekker & Beekman, 2013). Although the benefits of a culturally adapted treatment are generally accepted, it is not clear how to adapt the therapy approach to achieve the desired improvements. One approach includes taking the “illness myth” into account, considering the cultural explanation of the disorder (Benish et al., 2011). Another potential approach incorporates a broader understanding of a culturally shaped value system based on beliefs and symptom presentation into therapy (van Loon et al., 2013). Culture adaptations could also be made quite specific, as done by Hinton, Pich, Hofmann and Otto (2013). In their culturally adapted cognitive behavioral therapy specific culturally shaped terms and objects are used as focus objects in mindfulness tasks. Taken together, although the treatment of ethnic minority groups can be improved by culturally adapted therapy, it is not yet clear how exactly this adaptation is implemented in the best way.

One way to congregate information on how to improve therapy for a culturally diverse population is to focus on reasons why the predominant Western treatment is either disadvantageous or advantageous for clients from ethnic minority groups. Studies covering the topic of predictors of treatment effectivity in transcultural mental health care focus mostly on a specific population. One example of a transcultural research was conducted by Nygaard, Sonne and Carlsson (2017). Their research was directed at a refugee group in Denmark, whose ethnicity or nationality was not further clarified. The study revealed that psychotic symptoms of PTSD patients were related to personality changes and more severe PTSD symptoms. Still,

psychotic symptoms are easily confused with flashback experiences and delusions, which makes it difficult to investigate the effects of psychotic symptoms on PTSD (Nygaard et al. 2017). Hinton, Barlow, Reis and de Jong (2016) focused on a group of Cambodian trauma survivors, offering a thematic and contextual analysis of the concept “thinking a lot”, a term often used by those individuals. A general causal network of “thinking a lot” led to a higher level of psychopathological symptoms and might therefore trigger traumatic memories and cause PTSD (Hinton et al., 2016). Both the work of Nygaard et al. (2017) and Hinton et al. (2016) are promising approaches, but due to the restricted number of predictors and specific client population, these studies provide limited information.

Research focusing on the Western home population of the authors and the general predictors of PTSD treatments is more elaborated. De Kleine, Hendriks, Smits, Broekman and van Minnen (2014) established a way of structuring predictors which could affect treatment outcome into demographic characteristics, clinical characteristics, and personality characteristics. It was shown that in a pharmaceutical treatment enhanced exposure therapy only personality traits predicted treatment outcome. Independent of enhancement intake, the demographic factor education appeared to be the only significant predictor for both groups. A higher education was disadvantageous for treatment outcome (de Kleine et al., 2014). Considering the structure which de Kleine et al. (2014) introduced, not much else is known about demographic factors, whereas personality and clinical characteristics are more extensively investigated. Research by Ehlers et al. (1998) gives insight into potentially relevant personality factors. Focusing on rape victims and victims of sexual assault, they investigated two personality characteristics which influenced treatment outcome: Both mental defeat and a general feeling of alienation resulted in worse treatment outcome compared to participants showing mental planning and no signs of permanent change towards alienation following the trauma (Ehlers et al., 1998). Research about clinical characteristics includes work by van Minnen and Hagedaars (2002), who investigated the effects of fear activation during exposure sessions. Depression symptom severity and PTSD symptom severity before treatment differed between improvers and non-improvers. In contrast to Nygaard et al. (2017), who found that psychotic symptoms influenced treatment outcome, van Minnen, Hamed, Zoellner, and Mills (2012) investigated comorbidity, including psychotic symptoms, and found no contraindication for the use of prolonged exposure.

The current study aims to integrate the information about predictors found in general PTSD research with transcultural mental health care. Already existing records of an ethnically diverse sample were examined regarding the effectivity of PTSD treatment, to investigate

predictors which distinguish between improvement and stagnation in treatment. Based on previous research and the availability of information in the clients' reports, the following predictors were investigated: the level of education, the prevalence of depressive symptoms, as well as the prevalence of psychotic symptoms. According to Maercker and Horn (2013) the cultural factors influencing PTSD symptoms and treatment are highly reliant on a shared value system incorporated by society and culture that shape a traumatic experience. In the mental health care context there often is not enough capacity to investigate an individual's culturally shaped attitude. As an estimation of the individual's cultural upbringing and societal influences, the country of origin was included as a fourth possible predictor.

Taking previous studies into account, expected crucial factors for treatment outcome are clinical characteristics. Additionally, it is assumed that high depressive symptom severity has a negative effect on treatment outcome (van Minnen & Hagedaars, 2002). Because depressive symptoms are registered as either present or absent in the used data set, it is expected that the general presence of depressive symptoms leads to worse treatment outcome than its absence. The prevalence of psychotic symptoms has more ambiguous support in literature. Nygaard et al. (2017) stated that psychotic symptoms affected the symptom severity through personality changes, but van Minnen et al. (2012) demonstrated that psychotic symptoms should have no negative consequences on treatment outcome in their elaborate study about the effect of comorbidity on PTSD treatment. In consequence, it will be expected that the presence of psychotic symptoms will not influence treatment outcome (although a negative hypothesis like this would need careful interpretation if found to be confirmed). The evidence for demographic characteristics is limited, except in a Dutch sample where higher education led to worse treatment outcome (de Kleine et al., 2014). Corresponding effects are expected in a transcultural sample.

The current study uses the country of origin as an estimation of an individual's cultural values. Elaborate research regarding the World Values Survey has shown that Western societies, such as *Protestant European* and *English-Speaking* societies, show more secular-rational values and self-expression values in contrast to traditional values and survival values (e.g. Inglehart, Basañez & Moreno, 1998; Inglehart, 2007; & "World Values Survey", n.d.). As the investigated treatments for PTSD are mostly established in those societies, it is expected that participants who grew up in societies sharing these values (e.g. *Confucian* and *Orthodox* societies concerning the secular-rational values, and *Latin American* and *African* societies concerning the self-expression values) will benefit more from PTSD treatment than participants

from *Islamic societies*. These societies score high on traditional values and survival values (“World Values Survey”, n.d.).

By investigating these predictors in an ethnic diverse sample, this study gains more insights in the mechanisms of transcultural treatment of PTSD. This work provides useful information about the treatment of PTSD in transcultural mental health care, to eventually offer a more culturally sensitive treatment for individuals with non-Western ethnic and cultural background in a Western therapy setting.

## **Method**

### **Participants**

Research data were retrieved from clients’ records at ProPersona Nijmegen at the division of transcultural psychiatry. All records of clients who were registered for treatment at the moment of investigation, as well as a list of former clients provided by therapists, were scanned for possible participants, which was a total amount of 230 records. In the final research all records were included in which the client had received a PTSD diagnosis, in which treatment was finished (although maybe a new treatment had started), and where the treatment had consisted of EMDR or exposure therapy (imaginal exposure and/or in vivo exposure). This resulted in 42 participants. Due to three reports with missing information about the educational background, 39 cases were entered in the final model ( $M_{age} = 35.13$ ,  $SD_{age} = 9.86$ , by the time treatment started; female:  $n=15$ ). All data were either retrieved from therapist reports or administered in the context of standard quality assessment of treatment, therefore they were already available in the clients’ records. No new data were assembled, and no additional ethical approval was needed. The relevant information for research and information about participants’ identities were coded separately, guaranteeing the anonymity of clients whose data was used in this research. Hence, the data could be analyzed without any personal knowledge of the individual clients.

### **Material**

The used material was based on the retrieved information from clients’ records, adapted from intake reports, therapy and treatment plans, referral information of general practitioners, administered questionnaires, diagnostic testing, as well as therapist reports and notes after each treatment session.

### **Responder treatment**

Every participant who was included in the final research was sorted into either one of two categories: successful treatment ( $n = 7$ ) or unsuccessful treatment ( $n = 32$ ). This resulted in a binary coding of the variable, with “yes” indicating a successful treatment and “no” indicating an unsuccessful treatment. The coding was based on the decision of the therapist and client at the end of EMDR or exposure treatment. For a successful treatment, the treatment was stopped with both the therapist and the client satisfied and when both considered the treatment done. This means that either the treatment stopped, or it was continued for symptoms or disorders other than PTSD. In the case of an unsuccessful treatment, either the approach of treatment was changed ( $n = 15$ ), for example to structural and supporting therapy sittings, or there was a drop-out of treatment ( $n = 17$ ). For a change of treatment, the therapist and the client agreed that EMDR or exposure therapy was not yielding enough improvement or even worsening the condition, and it was decided that an alternative treatment approach should lead to more benefits. Drop-out of clients either took place before the first treatment session ( $n = 10$ ) (but still after the intake) or after the first treatment session ( $n = 7$ ). However, drop-out before the intake was not included, as these reports did not contain any information regarding the predictor variables. If a client had a positive treatment outcome, but still showed a relapse at a later point, the moment of successful treatment and all related information were still included as effective treatment.

### **Education**

Based on the highest achieved educational level, the client’s education was sorted into either low (primary education or lower), moderate (secondary education and post-secondary education) or high (tertiary education or higher), adapted from the *International Standard Classification of Education* (ISCED 2011) (UNESCO Institute for Statistics, 2012). The information about the achieved education could be found in the intake reports or notes of treatment sessions.

### **Prevalence of depressive symptoms**

In some cases, the prevalence of depressive symptoms was measured by using questionnaires. The Dutch versions of either the Mini International Neuropsychiatric Interview (M.I.N.I. 5.0.0; van Vliet & de Beurs, 2007;  $n = 14$ ), the Beck Depression Inventory-II (BDI-II-NL; van der Does, 2002;  $n = 3$ ) or the self-reported Inventory of Depressive Symptomatology (IDS-SR; Rush, Carmody, & Reimnitz, 2000;  $n = 6$ ) affirmed the prevalence of depressive

symptoms. In the recent sample, the M.I.N.I 5.0.0. implied depressive symptoms by either indicating a possible diagnosis of *major depressive episode* or *dysthymia* (van Vliet & de Beurs, 2007). For the BDI-II-NL, a total score was administered. According to the classification of the questionnaire (van der Does, 2002), two clients reached a score that indicated severe depression and for one participant a moderate depression was indicated. There were no cases in which the BDI-II-NL was administered but did not indicate a depression. In classification terms of the IDS-SR (Rush et al., 2000), five participants scored an indication of very severe depression and one participant scored an indication of moderate depression. There was no administration of the IDS-SR where no depression was indicated. Other participants did not complete any of the mentioned tests, but still received a diagnosis of depression based on the therapist's evaluation ( $n = 14$ ). For every participant that did not receive any of these classifications, the absence of depressive symptoms was assumed ( $n = 9$ ). The variable was therefore coded binary, with the prevalence of depressive symptoms either present or absent.

### **Prevalence of psychotic symptoms**

Two ways of scoring the prevalence of psychotic symptoms were used. In four cases, the M.I.N.I. 5.0.0 (van Vliet & de Beurs, 2007) was administered and indicated the prevalence of psychotic symptoms, by either indicating a possible diagnosis of *mood disorder with psychotic features* or *schizophrenia*. Otherwise, if no M.I.N.I. was administered, the DSM diagnosis *psychotic disorder: not otherwise specified* was given ( $n = 3$ ). In these cases, a presence of psychotic symptoms was registered. In the other cases ( $n = 32$ ), the absence of psychotic symptoms was assumed. The prevalence of psychotic symptoms was registered binary as either present or absent.

### **Origin**

The country of origin was registered as an estimation of cultural background. The information could be retrieved from either the referral information of general practitioners or the intake reports. For statistical reasons, the categories were limited, and the countries of origin were clustered into regions, according to the Inglehart-Welzel cultural map based on the World Values Survey research ("World Values Survey", n.d.). Instead of the most recent version of the cultural map (wave 6), the fifth wave of the cultural map was used as it still distinguishes between *African* and *Islamic* societies, which offers more information concerning the current sample. The fifth wave of the cultural map includes 9 different clusters. Three clusters can be perceived as mostly "Western societies" (*Protestant Europe*, *English Speaking* and *Catholic*

*Europe*). The participants were sorted into the remaining 6 clusters: *Confucian* ( $n=0$ ), *Orthodox* ( $n=6$ ), *South Asian* ( $n=0$ ), *Islamic* ( $n=22$ ), *African* ( $n=11$ ) and *Latin American* ( $n=0$ ). As some clusters did not include any data, only the clusters of *Islamic*, *African* and *Orthodox* societies were included into the analysis.

Some countries of origin were not mentioned in the fifth wave of the Ingelhart-Welzel cultural map (“World Values Survey”, n.d.), but still found in the data used. Using the cultural map of wave 6 Armenia (*Orthodox*) and Azerbaijan (*Islamic*) could be sorted. Other countries were sorted based on neighboring countries and regions, which could be found in wave 5 (“World Values Survey”, n.d.): Sierra Leone, Congo, Angola and Guinea were considered as *African* societies, Eritrea, Somalia, Afghanistan, Syria, Sudan and Chad were considered as *Islamic* societies and Bosnia, Yugoslavia and Nagorno-Karabach (Armenia) were considered as *Orthodox* societies.

## **Procedures**

In a first step, a list of possible participants was compiled. This included, firstly, all clients that were still in treatment at the moment of research at the transcultural division of ProPersona. Secondly, therapists of the division provided lists with former clients, who were in treatment in the past. All these clients and former clients were checked in the following order: first, if there is a PTSD diagnosis, and secondly if the treatment consisted of either EMDR or exposure therapy for PTSD symptoms. If a report met these requirements, the information was included into the research and the data was prepared to be included into the analysis. Besides the examined variables, additional relevant demographical, clinical and process-related data were formatted to be used in further research.

First, the intake reports were inspected. After that, all additional information was considered. If contradictory information could be found, the information of the intake report was used. If several intake reports were administered, all information understood as not changing rapidly (e.g. level of education and country of origin) was combined. For information that can change more rapidly (e.g. the prevalence of both depressive and psychotic symptoms), the reports that were most close to the start of EMDR or exposure treatment were used. After the information of a report was edited, the participant was either sorted into successful treatment, unsuccessful treatment or treatment still ongoing. Some participants were still in treatment but had also received (un)successful treatment of PTSD in the past and those files were therefore included into either successful or unsuccessful treatment.

The preparation of the first five reports was used as a pilot study. The variables were included and conceptualized based on the availability and the operationalization found in the pilot study, as can be seen in the material section for each variable. After the pilot study, the severity of PTSD symptoms was still considered as a possible predictor in the final model, but it had to be excluded because of too many reports without data (38% missing data).

### **Statistical analysis**

Using IBM SPSS 23, a multiple logistic regression analysis was performed with successful treatment (*yes/no*) as the dependent variable, and with education (*low/moderate/high*), origin (*Islamic/African/Orthodox*), prevalence of depressive symptoms (*yes/no*), and prevalence of psychotic symptoms (*yes/no*) as predictor variables. A single step way of entering the variables into the logistic regression model was used. The reference category for analysis was 'no' for the dependent variable, as well as for the prevalence of psychotic and depressive symptoms; *Islamic* for origin and *low* for educational level, respectively. Additionally, the Hosmer-Lemeshow goodness-of-fit was performed to evaluate the multiple logistic regression model. No interaction effects were investigated to keep a parsimonious model and because there is no evidence for any interaction-effects in the scientific literature.

## **Results**

### **Descriptive statistics**

From the subjects who successfully completed treatment ( $n = 7$ , female:  $n = 2$ ), 71.4% showed depressive symptoms ( $n = 5$ ) and 28.6% showed psychotic symptoms ( $n = 2$ ). In this group the main level of education was high ( $n = 3$ ; 42.9%), whereas two cases had a low level of education and two cases had a moderate level of education. The subjects were born in *African* ( $n = 1$ ), *Islamic* ( $n = 5$ ) and *Orthodox* ( $n = 1$ ) societies. Hence, 32 participants received unsuccessful treatment (female:  $n = 13$ ). Of these subjects, 78.1% had an indication of depressive symptoms ( $n = 25$ ) and 15.6% had an indication of psychotic symptoms ( $n = 5$ ). The main educational level in this group was low ( $n = 19$ ; 59.4%), whereas three cases received high education and 10 cases received moderate education. The origin was either *African* ( $n = 9$ ), *Islamic* ( $n = 18$ ), or *Orthodox* ( $n = 5$ ).

### **Model including all four predictors**

A logistic regression analysis was conducted. Successful treatment was used as a responder variable. The categorical predictors included educational level, origin, and the presence of both depressive and psychotic symptoms. A quasi-complete separation occurred within the data, and no logistic regression analysis could be processed. The outcome variable can almost entirely be explained by the combination of two of the predictor variables, namely origin (*Islamic*) and psychotic symptoms. No maximum likelihood estimation could be established, and the logistic regression could not be performed (Field, 2012; “Complete or quasi-complete separation”, n.d.). This is most likely due to the small sample size. According to Field (2012), two options are possible: more data could be collected, or a simpler model needs to be chosen. As there was no possibility of a more elaborated data collection in this study, a simpler model was chosen.

### **Second model without psychotic symptoms**

Due to the quasi-complete separation within the data, it was chosen to perform the logistic regression without the prevalence of psychotic symptoms as predictor. This may exclude important information, but with the available sample size, a simpler model was needed. Given the research question, origin was considered as the more informative variable and remained in the analysis. Therefore, a logistic regression analysis with successful treatment as responder variable, and the categorical predictors education, origin, and prevalence of depressive symptoms was conducted. In total 39 cases were analyzed. The model is not able to significantly predict the likelihood of treatment effectivity (omnibus  $\chi^2 = 6.12$ ,  $df = 5$ ,  $p = .295$ ). There is no significant difference between the explained variance of the regression model without predictors and the model with the predictors included. This is additionally confirmed by the Hosmer-Lemeshow test ( $\chi^2 = 2.57$ ,  $df = 7$ ,  $p = .922$ ). The baseline model without predictors assigns 82.1% of cases correctly (as unsuccessful treatment), as the full model with entered predictors also predicts 82.1% of the cases. This high number is also likely caused by the sample size. As it is not possible to compute an exact  $R^2$  in a logistic regression, the  $R^2$  value can be estimated between 14.5% (*Cox & Snell  $R^2$* ) and 23.8% (*Nagelkerke  $R^2$* ). None of the predictors in the model significantly explains any variance of treatment effectivity, as there is no improvement compared to the baseline model without predictors. Neither the region of origin (*Islamic* as reference category  $p = .758$ ; *African*:  $b = -0.95$ ,  $p = .459$ ; *Orthodox*:  $b = -0.19$ ,  $p = .892$ ), depressive symptoms ( $b = -1.37$ ,  $p = .249$ .) or the level of education (*low* as reference category  $p = .093$ ; moderate:  $b = 0.57$ ,  $p = .622$ ; high:  $b = 2.66$ ,  $p = .034$ ) offer additional

explanation for the chances of receiving successful or unsuccessful treatment. The predictive value of the education level might indicate a possible trend. The chances of a participant receiving successful treatment given high education compared to other levels of education might be 14.2 times higher. The 95% interval of odds ratio indicates that, although no significant results, the odds are likely to exceed 1 ( $Exp(B) = 1.22$  to  $168.79$ ), which supports a possible positive trend.

### **Discussion**

The aim of the recent study was to investigate possible predictors of standard PTSD treatment effectivity in a transcultural population. The predictors that were meant to be investigated were educational level, the cultural background estimated by the country of origin, prevalence of depressive symptoms, and the prevalence of psychotic symptoms. Due to statistical limitations, the prevalence of psychotic symptoms was excluded from the final model. The results show that the suggested model is not able to predict successful EMDR or exposure therapy for PTSD. The odds of receiving successful treatment of PTSD are neither influenced by the educational level, the country of origin nor the prevalence of depressive symptoms. Originally, it was expected that the prevalence of depressive symptoms and a high educational level would lead to worse treatment outcome. Furthermore, it was expected that the chances of treatment success would differ according to region of origin, with an *Orthodox* and *African* background resulting in better treatment chances. Neither of these expectations can be confirmed, and thus the hypotheses are rejected. Nevertheless, the results might indicate a possible effect of educational level on PTSD treatment effectivity, as it might be possible that higher education is related to positive treatment outcome. However, as no significant results were found in the current study, further research is needed on this topic. Even though the results should be interpreted with caution, the general conclusion at this point is after all, that the suggested predictors seem not suitable to predict PTSD treatment effectivity of EMDR and exposure therapy in a diverse ethnic minority population.

These results question the extent to which the general understanding of PTSD treatment is applicable to individuals with a non-Western background. In prior research, clinical characteristics seemed to be the most important predictors for treatment effectivity (de Kleine et al., 2014). This has not been found in the recent sample. Unfortunately, two clinical predictors were excluded, which limits the expressiveness of the effects of clinical characteristics. Still, no predictive value of depressive symptom prevalence was found. A possible explanation could be a different expression and perception of depressive symptoms by participants. Ezeobele,

Malecha, Landrum and Symes (2010) showed that the Western shaped concept of depression did not apply well to Nigerian women living in the U.S. The stigma of depression made them relate depressive symptoms to forms of madness and witchcraft, which they likely tended to see more in others than in themselves. In the recent sample, a different perception and expression of depressive symptoms could have led to a different influence on treatment outcome as found by van Minnen and Hageaars (2002). One could imagine that for example the perception and reactions of both therapists and the social network differ. Not only the reactions of others could differ: In the recent study the prevalence of depressive symptoms was indicated by either self-reported questionnaires or the evaluation of the therapist, which could influence the detection of depressive symptoms in the first place. Although a skilled therapist in the field of transcultural psychotherapy might be more aware of this issue, the social stigma might be sufficient for clients to not express depressive symptoms, which makes addressing them in therapy difficult.

Besides the clinical characteristics, it was also expected that the educational background of an individual can predict treatment effectivity. De Kleine et al. (2014) showed that a higher educational background led to worse treatment outcome. This is not found in the current sample. The educational levels in this sample were probably more extreme compared to the Dutch sample by de Kleine et al. (2014), as the current sample included individuals who received no schooling at all, which might not be typical of a Dutch sample. This could have led to new challenges within therapy, shadowing the effect found by de Kleine et al. (2014). It is noteworthy that the results suggest a trend that a higher education might possibly improve treatment effectivity, which would be the opposite of the findings by de Kleine et al. (2014). If this trend will be found significantly, this could probably also be explained with the extreme living situations many individuals of the sample face. A higher education might for example benefit language skills in both Dutch or English or may be related to higher financial savings. These are just some examples of how the migration stress could possibly be lowered by a higher educational background, therefore influencing treatment effectivity. In the recent study, the educational background does not predict treatment effectivity, and these ideas should only be considered as possible directions for further investigations. In general, it shows that the two predictors that were retrieved from prior studies but not investigated in transcultural populations before, seem to be less suited to predict treatment effectivity in these circumstances.

The country of origin was added as a third predictor to establish an estimation of the cultural background. It was clear from the beginning that culture is a difficult concept to define and that the country of origin cannot fully explain someone's cultural upbringing. Nevertheless,

in transcultural research efforts should be made to take the cultural background into account. The classification of origin into either African societies, Islamic societies or Orthodox societies cannot predict PTSD treatment effectivity. It is possible that, as there was no Western group to compare with, none of them benefit from standard PTSD treatment. Like Marsella (2010) argued, the main treatment approaches of PTSD might be limited in the context of transcultural mental health care. Every cultural frame would have different ways of facing traumatic experiences and dealing with the consequences. They are described as “non-Western” and traditional health systems. Central to these healing systems should be the healing principle, the cultural factor of treatment. This means, regardless of origin, in all different cultural contexts considered as “non-Western”, the whole applicability of treatment might be limited.

Measuring cultural influences based on the region of origin includes methodological flaws. It might even be argued that the idea of classifying individuals into cultures is generally wrong. DelVecchio Good and Hannah (2014) criticize the idea of culture as an analytical concept in general. By clustering cultures, a tension would arise in transcultural mental health care, because the evidence-based practice could not be combined with an individualized conceptualization of culture. Although this might be a possible explanation why no cultural differences were found in the recent study, there is strong evidence that the impact of culture in mental health care exists (Marsella 2010; Perilla et al., 2002; Zayfert, 2008). After all, an individual can never be fully understood from a certain group membership (e.g. age, gender or social economic status), but the acknowledgement of the background of a person supports understanding of the individual case, while mental health care will still be individually adjusted to the client’s needs. The idea of classifying cultural background therefore still appears useful, although a different path may be needed. The recent study classified the origin based on the World Value Survey according to secular-rational and self-expression values on the one hand, and traditional and survival values on the other hand (Inglehart, 2007). A more sophisticated approach might find a remedy, like the concept introduced by Vignoles et al. (2016). Based on the theory of independent and interdependent self-construals, they developed a system of psychological concepts, which appears to be highly influenced by culture. In contrast to the two-dimensional model of the World Value Survey (Inglehart, 2007), Vignoles et al. (2016) established a 7-dimensional model. A more complex model of cultural classification might be able to achieve a more nuanced view on the cultural influences on PTSD treatment effectivity.

In the current study there are statistical problems due to the sample size. Hence, conclusions should only be drawn carefully. It is not only the sample size that causes statistical limitations, but also the ratio of successful and unsuccessful treatments is undesirable as only 7

out of 39 participants received either effective EMDR or exposure treatment (approx. 18%). As a result, the statistical baseline model, without any predictors entered, already explains 82% of the variance, since the model fits best by predicting a non-effective treatment for every case, without any supplementary information added. It is important to keep in mind that unsuccessful treatment in this categorization does not mean that the treatment was not helpful. In many cases the treatment of either EMDR or exposure therapy stopped, but treatment was continued with supporting therapy sessions, as the standard PTSD treatments often appeared to be too difficult. These data therefore do not show that there was no general symptom relief for individuals. Nevertheless, it was shown that the standard treatments of PTSD were not applicable in these circumstances, seeing that only 18% of participants could be categorized as receiving successful treatment.

In some cases, treatment was stopped and continued with a different approach, but more often, clients stopped the treatment without the consent of the therapist, resulting in high numbers of drop-out. This is another explanation of the high difference in the numbers of successful and unsuccessful treatment. Treatment retention can be a huge issue in mental health care, especially in ethnic minority populations (Kapke & Gerdes, 2016; Wood, Chiu, Hwang, Jacobs & Ifekwunigwe, 2008). In the current study drop-out was considered as unsuccessful treatment, although it may also be considered as its own category of treatment effectivity. Tarricone et al. (2010) investigated a transcultural population comparable to the current study in terms of drop-out. In their sample, a recent history of migration, non-Asian origin, and receiving social intervention predicted drop-out. Besides possible predictors of treatment effectivity, both the low number of effective standard treatment and the high number of drop-out need to be considered in transcultural mental health care.

This study is considered as a first step in ordering and analyzing data of an ethnic minority sample. Already established predictors in Western samples were investigated in the context of a transcultural sample. The lack of effective treatment, as additionally shown by the few cases of successful treatment as well as the high numbers of drop-out, cannot be explained by the prevalence of depressive symptoms or the educational level. The chosen way of analyzing the cultural background has also proven to be unsuitable. Firstly, the need for useful predictive information becomes apparent. Secondly, the applicability of predictive research in transcultural mental health care becomes disputable.

Therefore, future research should be directed in these two directions. There are methodological limitations in the recent study that could be improved to confirm the conclusions. Methodological improvements could obviously be made by achieving a bigger

sample size, which would hopefully allow the use of psychotic symptom prevalence as a predictor. In that case, the importance of clinical characteristics in predicting treatment effectivity could be further investigated. Additionally, a non-categorical measurement of treatment effectivity, for example in terms of symptom reduction, would also have additional value, whereas drop-out could be analyzed as a category on its own.

This study also gives direction for relevant future research questions aside from improving methodological flaws. As already mentioned, a more focused research on cultural concepts could eventually be incorporated into transcultural mental health care research. Additionally, the educational background should be tested in the future for its relevance in affecting PTSD treatment effectivity. Due to the extreme ratio of successful to unsuccessful treatment, future research should focus on the cases in which the standard PTSD treatment was a helpful intervention. Examining these cases could be done in both a qualitative and in a quantitative manner. Comparable qualitative work was done by Park, Chesla, Rehm and Chun (2011). Therapists adapted their treatment based on culturally specific needs of Asian American clients. In-depth interviews and the analysis of narrative data resulted in three main concepts: the use of cultural knowledge, cultural brokering and supporting the families in transitions (Park et al., 2011). Instead of looking at a specific ethnic group independent of diagnosis or administered treatment like Park et al. (2011) did, further research could use this method to investigate the few cases that benefitted from the standard treatments of PTSD in a diverse ethnic minority sample. These findings could additionally be compared to a Western sample. For future research, it will be important to focus on possible predictors that explain PTSD treatment effectivity. One prominent way would be the in-depth analysis of cases in which the intervention proved to be effective.

Despite some clear statistical limitations and careful interpretation of the results, this study adds meaningful information to the field of transcultural mental health care. It was demonstrated that the general predictors found in PTSD research might not be readily applicable to a transcultural population. The clinical characteristics were not as important as prior research suggested, which might be due to culturally specific expression of symptoms. The same can be said about the influence of the educational level, which might be covered by the extreme situations many clients with a recent migration background are facing. Although the origin likewise did not predict treatment effectivity, it is most likely that the cultural context of an individual should nevertheless be considered as an important factor. Adjustment in the way of categorizing may be needed. Moreover, the current study has shown that there is a substantial need for more evidence-based transcultural treatment, as the standardized treatments

are not sufficient in providing the needed help. This can be seen in the few cases of successful standard treatment and high rates of drop-out. Skilled transcultural therapists might already adjust their work. A next step would be to support these practitioners in their daily work by offering scientific and evidence-based assistance.

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