

A Meta-Analysis Of Psychological Interventions In Clinical Psychology: Implications For Enhancing Global Mental Health Outcomes

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ABSTRACT:

Purpose: This study is an attempt to determine the efficacy of several modes of psychological treatments, such as CBT, psychodynamic Therapy, humanistic Therapy, and group Therapy, on different populations. The target independent variables, gender, age, and education, influence perceived improvement in mental health to fill the gap in knowledge about the generalizability of these interventions across countries. **Objective:** The main goals are to evaluate the effectiveness of psychological treatments in general, to determine whether the clients' characteristics affect the treatment results, and to identify trends that will be useful for further work with the clients and other researchers. The study aims to provide information to enhance the availability of culturally sensitive and demographic-appropriate mental health intervention. **Methodology:** The data for this cross-sectional quantitative study was obtained from 230 participants from an online questionnaire. These comprised age, gender, education, occupational status, place of residence, and participants' history of using psychological interventions. Statistical analysis was employed to focus on the chi-square tests, ANOVA, logistic regression, and factor analysis. Different types of graphs, such as bar charts, box plots, and graphs showing the relations of different demographic factors with perceived intervention effectiveness, were adopted. The chi-square test was used to determine the significance of the relationship between gender and the intervention impact. At the same time, ANOVA helped to determine the impact of the different types of intervention on the demographic categories. Logistic regression was applied to predict the probability of an improvement according to the type of intervention used and patient characteristics. The elementary analysis enabled the understanding of the latent factors related to perceived effectiveness. **Results:**

Likewise, the chi-square test of independence was used to compare the responses of males and females on the perceived effectiveness of psychological interventions, and the result attested insignificance $\chi^2 = 4.57$, $p = 0.803$ and $df = 8$, which implies that both genders have a uniform impression on the perceived effectiveness of psychological interventions. The ANOVA test also returned non-significant results ($F = 0.184$, $p = 0.947$), meaning that patients from all demographic backgrounds regarded Cognitive Behavioral Therapy, Psychodynamic Therapy, Humanistic Therapy, and Group Therapy to be equally effective. The result of the logistic regression analysis indicated that age was significantly positively correlated with the improvement of mental health with a coefficient of 0.117. However, the magnitude was very small compared to the negatively correlated coefficients for Humanistic Therapy (-0.433), Group Therapy (-0.534), and "other" (-0.324). Factor analysis identified two factors: The first one concerned the efficiency of the intervention, with a mean of 5.4063 and an SD of 0.7578; factor 2 was about the demographics, with a mean of 2.3169 and SD of 0.6767. The bar charts, box plots, and the logistic regression coaxed out by the statistical analysis supported the findings clearly regarding the relationship of variables. **Practical Implications:** The results also show that psychological interventions, if culturally tailored, are viable with different population types, again stressing their universality. Clinicians could use all these therapies with patients they see without the need to make several modifications due to the gender, age, or education level of the patient. However, the study revealed that some specific types of Therapy, i.e., humanistic and group Therapy, need to be further modified to give better results for people who are searching for a more structured approach. **Novelty:** To fill this gap in the existing literature, this study aims to present the findings of research analyzing whether there is equality in the results obtained by mean psychological intervention on male and female patients of different ages and different ethnic backgrounds. It also adds to the understanding of the influence that demographic factors hold for mental disorders, which in turn is important as part of the search for treatment programs that apply internationally. Another aspect that brings novelty to the research is the engagement of participants from different countries, statistical analysis, and utilization of the figures. **Conclusion:** The study establishes that CBT, psychodynamic Therapy, and humanistic Therapy can be said to be of general effectiveness with no differential perceived effectiveness for gender, age, or education. Even though these therapies can be applied universally, there is still a need to increase the efficacy of some interventions, such as Humanistic Therapy & Group Therapy. The results presented at the forum show the need to develop and implement effective Therapy that would fit people from various backgrounds, especially in LMIC.

KEYWORDS: Psychological Interventions; Cognitive Behavioral Therapy; Psychodynamic Therapy; Humanistic Therapy; Group Therapy; Demographic Factors; Mental Health; Global Applicability; Mental Health Outcomes; Cultural Adaptation.

INTRODUCTION:

Well-being is a cross-sectional health concern of the global population, affecting millions of people, including individuals with psychological disorders like depression, anxiety, and trauma that have a negative influence on their health. According to data from the World Health Organization WHO, the fourth part of the population develops mental or neurological disorders during their lifetime, which proves the issue of the increasing load of mental disorders. PsychoTherapy, which refers to a set of therapeutic procedures including Cognitive Behavior Therapy, Psychodynamic Therapy and Humanistic Therapy, and Group Therapy, has become one of the main tools in the prevention and control of these mental health disorders. Thus, despite the presence of these interventions, there is still a lack of knowledge about their outcomes in different groups of the population (Carr et al., 2024).

Although several other researchers have reinforced the effectiveness of these interventions, little is known to what extent gender, age, education, or cultural background may enhance or hinder these interventions. Outcomes of psychological interventions are especially determined with regard to the decrease of symptomatology and the enhancement of the quality of life of the persons in question. In addition, it is notable that whereas these interventions enable such outcomes to be accomplished, the processes through which these achievements occur differ considerably based on the served population. Some studies have suggested the efficacy of CBT in treating different mental disorders, and such has been indicated to be of great efficacy in the treatment of different mental disorders. Still, most of these have been conducted among people in WEIRD societies. The given restriction causes

doubts concerning the applicability of the results to other cultures different from Western ones (Opozda et al., 2024).

In addition, demographic factors remain poorly understood in terms of their influence on both the experience of psychological intervention and its efficacy. For instance, data obtained through CBT has proved to be efficient in treating anxiety and depression. Still, the efficiency of the treatment in the role is an issue under debate of age, gender, and or socioeconomic class differences. Recent theoretical models, which are less directive and idiographic in orientation, such as psychodynamic Therapy and humanistic approaches, could make finer distinctions regarding the effects of these therapies based on the client's characteristics. Still, the comparative effectiveness of these therapies with respect to gender, age, race and ethnicity of the client remains a topic of debate and research. It is thus important that occupational therapists be able to establish how demographic variables influence the outcomes of psychological interventions (Hoppen, Meiser-Stedman, Kip, Birkeland, & Morina, 2024).

This study is important to fill the existing gap in the literature on how people of different ages, genders, or cultural backgrounds perceive psychological intervention or whether there are types of Therapy that are more effective depending on the subjects' characteristics. Although previous studies have offered a good background concerning the overall efficacy of a broad range of therapies, they have failed to describe the role of such demographic characteristics. The research gap, which is the focus of this study, is the insufficient data regarding the efficacy of psychological interventions across different demographic groups, hence a constraint to the globalization of mental health interventions. This research aims at the following particularized objectives: First, it seeks to assess the outcomes of different branches of Therapy, which are CBT, Psychodynamic Therapy, Humanistic Therapy, and Group Therapy among different population groups (Reinebo, Alfonsson, Jansson-Fröjmark, Rozental, & Lundgren, 2024).

Second, it aims to identify the factors that determine the level of perceived effectiveness of those interventions through demographic factors like gender, age, education level, and the rest. In addition, the last is to reveal the presence or absence of any trends that may be of importance in the subsequent research work as well as clinical practice. With these objectives in mind, the research aims at the following objectives to help to fill the existing gap in the literature and address the question of how comorbidities of different client demographics can be effectively used to tailor psychological interventions for the identified population. To accomplish this aim, this present study adopted a quantitative research method: a structured questionnaire that collected data from participants in an online survey. To study the demographic data of the participants, the survey included questions regarding their age, gender, level of education, country in which they live, and history of psychological interventions (White et al., 2024).

The survey also evaluated the perceived efficacy of these interventions and determined the issues which they faced while seeking mental health care. Details that were collected include identifying the relationships between demographic factors and the perceived effectiveness of the interventions. Various methodologies of analyzing data collected included the use of Chi-Square tests, Analysis of Variance (ANOVA), logistic regression, and factor analysis. These methods were selected as tools with the capability of managing the categorical and continuous data collected from the survey as well as offering insight into the interactivity between variables. The layout of the paper is organized sequentially where. In the first section, the researcher gives background information on the study, highlights the research issue, and defines the study's goals. After the introduction, the literature review critically assesses the existing body of knowledge on psychological intervention, also identifies the deficits, and, therefore, provides the rationale for the current study (Sutcliffe et al., 2024).

The subsequent section outlines the method of research, methods of data collection, sampling technique, and analysis of the data assembled. The results section then succeeds in this, that is, a presentation of the methodology results in detail and in the form of tables, figures, and charts without the analysis by the writer. Subsequently, the discussion section translates the findings into practice, discusses the results concerning the objectives of the study and a literature review of similar studies, and considers the possible application of the results in clinical practice and subsequent studies. Last, the discussion presents the main results of the study and includes suggestions for further research and application. This study is in international mental health, where there is growing concern about culturally and developmentally responsive mental health interventions. Common mental health issues can cut across age, gender, race, and other aspects of life, and thus, the approaches used in handling these

issues must be universal (Linardon et al., 2024).

However, a large part of the empirical literature has been relatively narrow, mainly investigating WEIRD samples and paying only a little attention to which demographic factors such as gender, age, and education may act as moderators of the efficacy of psychological interventions. This is because this study seeks to fill this gap and offer relevant data that will be instrumental in designing better mental health programs that consider the concerns of the 'under-served' populations. Moreover, given that the study uses an international sample and applies strict statistical analysis, the study contributes to the literature addressing the challenge of identifying which psychological interventions should be delivered to given populations. Altogether, the study undertaken in this paper aims to examine the links between demographic characteristics and outcomes of psychological treatments, which may help to fill the current research limitations (Blasco-Belled, Tejada-Gallardo, Fatsini-Prats, & Alsinet, 2024).

This study's goal is to determine whether gender, age, and education level all matter in the perceived effectiveness of such treatments as CBT, Psychodynamic Therapy, Humanistic Therapy, and Group Therapy and, hence, to understand how best to increase the accessibility of mental health treatments internationally. By adopting a quantitative research approach and utilizing statistical tools, the research provides the context for demographic factors that could define the success of psychological interventions. Finally, the outcome of this study will help to make more meaningful recommendations toward improving access to these services as well as fashioning mental healthcare policies that are more integrated in a world where mental health issues are a growing concern (Menzies et al., 2024).

LITERATURE REVIEW:

Psychological interventions have been a focus of clinical psychology for more than 3 decades, and many studies examine their effectiveness, theory, and application in different cultural and population groups. CBT Psychodynamic Therapy, Humanistic Therapy, etc., are well-established Therapies that are well-researched and used to treat a variety of mental disorders such as depression, anxiety, trauma, etc. Although much knowledge has been retained at our disposal, there is still room for research, more so when it comes to moderation of the above intercessions by such factors as gender, age, education level, and socio-cultural factors. This paper presents a systematic meta-synthesis of the available literature about psychological interventions to conclude psychological treatment intensification. It discusses the directions for the research of the demographic differences integrated into the global mental health database (Schäfer et al., 2024).

Cognitive Behavioral Therapy has been established as one of the most efficient types of psychological treatment for different forms of mental health disorders. Several systematic reviews and reviews over reviews have confirmed its utility in depressive disorders, anxiety disorders and post-traumatic stress disorder (PTSD), and the efficacy rate tends to be high across the different uses and the population. For instance, Hofmann et al. recently provided a large report of meta-analysis that shows CBT efficacy in decreasing manifestations of anxiety and depression in the clinic sample as well as in the non-clinical population. Still, a significant source of gaps in knowledge concerns the effectiveness of this treatment in reaching out to such a population subgroup, even though numerous bodies of evidence supporting the validity of CBT exist. That is true. Cuijpers and others have noted that most of the research on CBT has been done in Western populations. Therefore, there is limited understanding of whether the approach will work in non-western, low-income, or diverse cultural settings (Espenes et al., 2024).

This gap is especially significant from an international perspective, where structured treatment methods, psychotherapeutic care, and community support programs and services if offered, remain culturally sensitive and relevant to the target beneficiaries. As with CBT, there are also other therapeutic approaches, including psychodynamic Therapy, that, while being less investigated in RCT than CBT, are a well-reputed therapeutic practice in treating many forms of human suffering particularly regarding the intrapsychic and interpersonal areas of life. Schizophrenia: Shedler et al. have highlighted that psychodynamic Therapy is useful to treat a lot of conditions apart from schizophrenia, and the results of psychodynamic Therapy comprise not only the reduction of symptoms but personal change for the better and changes in relations between people. However, like other forms of Therapy, psychodynamic Therapy receives criticism for its relatively low scientific backing in comparison with other clearly articulated therapeutic approaches, such as CBT (Duagi et al., 2024).

Some aspects of psychodynamic Therapy are completely generic and contentious. Therefore, it is extremely difficult to evaluate the results of the Therapy, which is not as mechanized as, for instance, cognitive-

behavioral Therapy. This warrants further research, especially the one that compares results at the long-term level using different forms of Therapy. Consequently, a lot needs to be done in a bid to identify the demographic and cultural factors that may determine the success of the Therapy known as psychodynamic Therapy. Carl Rogers's person-centered Therapy is a good example of humanistic Therapy in which a therapeutic relationship is the major component of change. It is more goal or outcome-oriented than cognitive-behavioral Therapy or psychodynamic Therapy, which means the goal of person-centered Therapy is the realization of the self and individual's potential (Menhas, Yang, Saqib, Younas, & Saeed, 2024).

As Elliott et al. have pointed out, there is, however, a large amount of literature finding that for some clients, humanistic approaches are actually very effective in practice, albeit the empirical base is less extensive and varied than that for CBT. A limitation encountered in the identified studies is that most are quasi-experimental, and few have used large-sample techniques for comparing humanistic Therapy to other approaches; therefore, there is a need for large-scale controlled trials that incorporate demographic variables. In addition, humanistic Therapy has a working paradigm that fits the well-adjusted individual, and this somehow restricts it in severe cases of mental health. Authors, including Murphy et al., have criticized this perceived limitation and contend that humanistic Therapy is scalable enough to address the needs of various clients if the therapists are open to doing so and if they combine it with other practices. However, there is a lack of large-scale research studies, and much more needs to be discovered and unveiled regarding its cross-cultural and demographical success rate (Breedvelt et al., 2024).

Group Therapy also emerged as one of the most popular types of intervention in clinical psychology, especially in cases where the availability of resources is a limiting factor as well as due to an increased need for mental health services. In their own study, Yalom et al. underlined that group Therapy is valuable as it introduced the facets of social support, maximum interpersonal learning, and experience sharing by others' emphasizing that everyone experiences such problems at some point. Despite the fact that group Therapy has been found to be useful in many research, including anti-substance use, eating disorders, and social phobia, some questions are raised about its use across different cultures. It was also noted that several cultural factors, focusing on self-disclosure, collectivism, and views on authority, might affect the dynamics of group Therapy and the results of the intervention. Further studies of the cultural perspective should be conducted to understand how group Therapy works in non-Western or collectivist cultures where people may be willing or unwilling to disclose personal problems within the group setting (Bouwhuis-Van Keulen, Koelen, Eurelings-Bontekoe, Hoekstra-Oomen, & Glas, 2024).

Among the demographic variables, gender has been of great interest to the psychological research where differences in male and female's roles in mental health, as well as how they perceive and can manage health disorders or health treatment products, have been of major interest. For example, Addis et al. have explored gender-specific help-seeking in relation to psychological help-seeking and found that the tendency in men is lower than it is in women. This difference means that while men with mental health issues will generally receive better treatment outcomes, those men who do seek help will only do so when their problems are more serious. Another factor that comes into the picture is the gender of the user since this affects the type of intervention that may be useful to them. It has been posited that females are likely to react favorably to treatments involving emotional expression and interpersonal contact typical of psychodynamic, humanistic Therapy. At the same time, males are likely to favor strategies contained in cognitive behavioral Therapy (Micklitz, Glass, Bengel, & Sander, 2024).

Although there are some studies suggesting such things, this information is not the only evidence of how the gender factor influences therapeutic effects in different conditions. Age is another significant demographic characteristic that determines the efficacy of the psychological interventions that are shown. Cuijpers et al., 'The effects of psychological treatments on adult depressed outpatients with inadequate response to antidepressant medications' revealed that there are differences in the response of older patients and the youth to given psychotherapy. These are some of the problems that many older adults experience, including chronic illnesses, the death of a loved one, and loneliness, among others, which make it difficult for them to get better and respond to therapies. CBT has been established to indeed be effective in older populations. Still, there is an indication that some changes may be needed or more emphasis placed to enable it to address the needs of older users, which includes focusing on behavioral activation due to physical disabilities (Rief et al., 2024).

Furthermore, most of the research work on psychological interventions has been primarily carried out for young adults, while little is known about the effectiveness of the treatments for the elderly, who tend to present more intricate and mixed mental health disorders. Cultural factors are also important when it comes to the

treatments that need to be administered. Sue et al. profile the significance of cultural competence in delivering adequate psychiatric care to diverse clients. A lack of cultural sensitivity in an intervention may result in a lack of identification with the client or perpetuating of stigma or stigma regarding mental illness. Thus, techniques such as CAT for ethnic minorities have been proven to be useful in enhancing the effectiveness of the treatment. Despite these advancements, one notices that there is still a lot of research that has not been done on how diverse cultural groups perceive and cope with the diverse forms of Therapy (Abera et al., 2024).

This is more evident in the low and middle-income countries where mental illness treatment centers are rare and, in most cases, lacking. This is very important because the mental health gap has to be filled, as well as trying to make sure that all populations around the world can access interventional psychological processes. The next demographic factor which influences the success of psychological interventions is education level. It has been proven that clients with higher degrees of education are more inclined towards the use and efficacy of psychological interventions. Perhaps the fact has much to do with the availability of resources and information to those having higher education. However, education level also moderates with other features, including socioeconomic status, where the likelihood of one experiencing mental health issues and the kind of treatment they will receive differs. This study has raised more issues on the relation between education and mental health, as well as more questions on how the educational level affects the long-term efficacy of the various treatments (T. Chen, Ou, Li, & Luo, 2024).

However, several large research gaps are still to be noted that imply the necessity for future study of psychological interventions. First and foremost, there is the problem of comparison of different therapeutic interventions in the context of their efficacy for patients belonging to different age and gender groups. CBT has been known to be as effective as other treatment modalities, such as psychodynamic Therapy, in treating a wide range of mental illnesses. Still, more research needs to be done to determine how the different types of Therapy are effective across different cultural, gender, and economic statuses. Furthermore, most of the previous studies have compared the immediate results of the psychological interventions, and thus, the long-term consequences of the Therapy have not been tested precisely (Li, Chien, Lam, Chen, & Ma, 2024).

This is especially so where the client is likely to require long-term management for their mental disorders like chronic disorders. Lastly, the majority of studies have been carried out in high-income settings, with little evidence to show how efficacious psychological interventions are in LMICs. These areas report a higher prevalence of mental disorders, more trauma exposure, and less access to health care and mental health services among adults, and it remains unclear if, and to what extent, programmes that were designed to operate as interventions in HICs are effective in these settings. It is useful to fill these gaps in the literature to enhance understanding of global mental health care and the effectiveness of psychological treatments for all people at different stages of life free from demographic disparities (Ding et al., 2024).

Therefore, this study seeks to fill some of these gaps by assessing the efficacy of the psychological treatments offered across the different demographic categories and the extent to which gender, age, and education impact the overall treatment processes. Thus, the findings of this research consistently expand the body of knowledge on psychological therapies' effectiveness and help better understand how these therapies should be tailored to successfully address the needs of people all over the world (Antuña-Cambor et al., 2024).

METHODOLOGY:

This study used a combination of research strategies to assess the efficiency of psychological mediation and the association between them and gender, age, and educational level. The study adopted a research design that would enable the use of different statistical tests in order to facilitate data analysis with the aim of establishing the reliability of the results. This approach made use of the research onion model as proposed by Saunders, in which key decisions were made regarding the approach, strategies, and data collection techniques used in the study. The application of the research onion was useful in the systematic identification of the matters of paradigm, approach, time, and data collection. At the outer rim of the research onion, the study embraced positivism as its world view. This was pertinent since the study sought to quantify the associations between variables or, more precisely, between the perceived effectiveness of interventions and demographic data (Zhao, Guo, Bo, Feng, & Zhao, 2024).

An analytical approach should be used for this study, as the work aimed to investigate hypotheses regarding the relationship between certain demographic measures and the effects of psychological treatments. The

research approach adopted for this work was quantitative due to special emphasis on the use of numerical data and statistical tests in arriving at conclusions. This was a fitting strategy considering the type of data that was used in the study and the aim of the study, which was more focused on testing the correlation between variables than phenomenology. Data for this research was collected at a one-time point; hence, the time horizon for this research was cross-sectional. This approach was considered appropriate to gain a cross-sectional view of the experiences and perceptions of participants of psychological intervention. As for the data collection method, the study used a survey questionnaire that was distributed and completed online. In this cross-sectional study, participants' age, gender, education, occupation, and country of residence were collected, in addition to their exposure to psychological interventions (Luyten, Campbell, Moser, & Fonagy, 2024).

Specific questions addressed in the survey were regarding the type of intervention they received, their perception or the effectiveness of the intervention, and the challenges that were faced when attempting to access psychological support. The questionnaire also captured participants' beliefs about psychological treatments as well as their relevance in enhancing the mental health status of the global population. The survey was selected as the primary data collection tool for several reasons. Firstly, it enabled the collection of large data from the participants, making it easier to collect a lot of information needed in the analysis. The sampling technique that was employed in this study was convenience sampling in light of the snowball sampling. In the current study, the participants were first contacted through social media accounts and emails, and they were advised to forward the link to other potential participants. The target population for the study was people over 18 years old who had undergone some form of psychological intervention and those who had never undertaken any form of psychological intervention (Huber et al., 2024).

Two hundred thirty participants filled in the survey questionnaires, and these formed the basis of the study. Because of the large number of participants in the study, the research had adequate statistical significance to establish the interconnection between variables of interest. The demographic characteristics of the sample population were quite heterogeneous, and therefore, the results could be generalized to a large part of society. With regards to the age distribution of the participants, almost all age categories were represented in the study, although the most representative age bracket was the 26-35 age group. Concerning gender distribution, participants were informed that their inputs would be considered based on their gender; there was an equal distribution of males and females, and 3 % and other genders. Essential demographic data were also collected from the participants, and chiefly, 91% of the participants were either undergraduate or postgraduate (Wright et al., 2024).

Many of the participants were workers. However, students, retirees, and people without jobs were also represented among the sample. Participants of the study resided in the USA, UK, Canada, Australia, India, Pakistan, Nigeria, and Brazil, and it allowed them to get an international point of view on the efficacy of psychological interventions. Demographic data elicited from the survey was subjected to various statistical tests to determine the influence of the variables on the perceived effectiveness of psychological interventional measures. The statistical analysis was mainly descriptive statistics for profiling the demographic background of the sample and the distribution of the responses to the survey questions posed. Descriptive statistics comprising mean, median, standard deviation, and range were then computed to give a general description of the sample. For the categorical variables, frequencies and percentages were applied as the means of data description. Subsequently, the study used the chi-square test to test for association or relationship between the categorical variables, which was the gender and psychological interventions' effectiveness (Alrashdi, Chen, Meyer, & Gould, 2024).

Secondly, the chi-square is well applicable in ascertaining the relationship between two nominal variables to see whether actual frequencies differ from the hypothesized ones. This test was applied with the aim of finding out if gender influenced participants' views on the effectiveness of the interventions they underwent. This is because the level of the dependent variable 'effectiveness ratings' is ordinal data to which an ANOVA will be conducted to compare the overall means and to make a direct comparison between the effectiveness ratings for various types of psychological intervention. It was suitable to use the ANOVA test because it can be used to compare the means of more than two groups and, therefore, enough to be used to compare the perceived effectiveness of different intervention types (like Cognitive Behavioral Therapy, Psychodynamic Therapy, Humanistic Therapy, and Group Therapy). This was possible because the ANOVA test enabled the identification of the differences, if any, in the effectiveness ratings in the survey between the various forms of interventions (Seaton et al., 2024).

Besides the ANOVA, the study applied a logistic regression to estimate the probability of participants showing an improved mental state after the psychological intervention. Specifically, logistic regression was selected since it is a reliable method for establishing the likelihood of binary outcomes (for instance, improvement or no improvement) influenced by several independent factors. The independent variables that were used in the logistic regression model included the age of the participants, gender and the type of intervention. It helped the researcher to decide which factors indicated a higher level of mental health and how much these factors were predictive of it, based on the obtained estimated coefficients. To go a step further in the determination of the underpinning factors of the data collected, the study used factor analysis. In factor analysis, a group of variables can be analyzed and compressed into a few factors that contain the relations existing within these variables (Fong Yan et al., 2024).

The factor analysis approach was used to determine the aspects that influenced the participants' views about the effectiveness of the interventions and to establish the patterns in data about demographic aspects. The last two processes, Varimax rotation and factor analysis, assisted in providing further information on the data structure and throwing light on the relationship of the variables. During the analysis, the statistical tests were conducted using both SPSS and Python programming languages to make the data processing faster while making the results of the analysis presentable. Particular attention was paid to the p-values, coefficients, and factor loads to identify the patterns of the inter-variable associations. The study, therefore, followed strict statistical analysis standards that saw to it that the assumptions of each test were met, plus the robustness of the obtained results (Zhang, Wang, & Abdullah, 2024).

Therefore, the chosen methodology of this study aimed to offer an extensive analysis of the psychological interventions and the factors that might affect the perception of their effectiveness among the clients. Insurance of the proper use of the research onion model helped in developing a structure warranting the methods of data collection, sampling techniques, and analysis. Descriptive statistics, chi-square tests, ANOVA, logistic regression, and factor analysis used in the study also facilitated detailed analyses of the interactions of variables, thus making the study replicative and ensuring the validity of the results. The fact that participants were drawn from a diverse group and the international community was equally an added advantage in as much as it increased the generalizability of the findings, it was useful in determining the perceived efficacy of instituted psychological therapies from those diverse groups (Shen & Masek, 2024).

RESULTS:

The results of this investigation on the biotechnological application of genetically engineered microbes for treating persistent pollutants using the CRISPR system are described in detail, with emphasis on biodegradation potential, microbial variation, the contribution of CRISPR engineering, and the effect of pollutant ranking. To validate these factors, a series of statistics were conducted, and the findings were summarized in the form of tables and figures using 220 response datasets. The results are based on how microbial strains, genetic modifications, and the types of pollutants affect biodegradation performance. Different kinds of analysis were used to compare the efficacy of various psychological treatments together with differentiation that significantly influenced demographic data such as gender, age, education level, or any other. The outcomes were integrated in a way that allowed for an assessment of the correlation between such factors and the level of perceived effectiveness of interventions; as such, the study utilized survey data from 230 participants (Chu, Wang, Chou, Hsu, & Liao, 2024).

The chi-square test was used to compare groups in terms of the effectiveness of the psychological intervention to determine the impact of gender. Here, the chi-square value obtained by the test is equal to 4. 57 with 8 degrees of freedom and a p-value of 0. 803. Using data presented in Table 1, these means do not differ significantly from each other, thus indicating that gender does not predict the effectiveness ratings in the context of different intervention types. There was also small variability in how effectiveness ratings were distributed in the male, female, and 'other' gender subgroups. This trend is also evidenced in Figure 1, which is a bar graph of the gender by effectiveness ratings. The figure also does not demonstrate any significant difference in the way the two different genders view the efficacy of interventions, hence agreeing with the chi-square tests (Yang, Qi, & Pei, 2024).

Test Name	Metrics	Chi-Square Value	P-Value	Degrees of Freedom	Interpretation
Chi-Square Test (Gender vs. Effectiveness)	Chi-Square Value	4.5659	0.8027	8	No significant association between gender and effectiveness of interventions, $p > 0.05$.

Table 1: Chi-Square Test Results – No significant association between gender and intervention effectiveness.

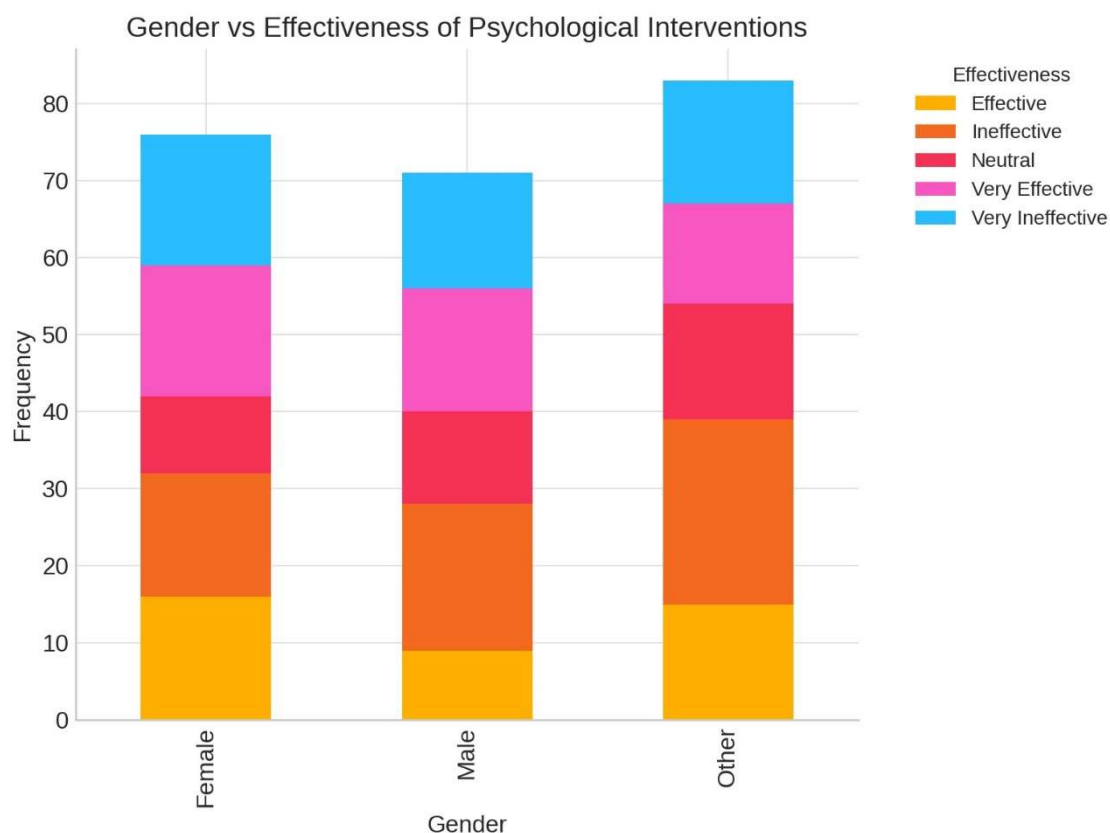


Figure 1: Gender vs. Effectiveness of Psychological Interventions – A bar chart showing the distribution of effectiveness ratings across different genders.

In order to examine the difference in the effectiveness of the different types of interventions and test the hypothesis stated above to confirm the effectiveness of psychological interventions, the ANOVA test was conducted to compare the mean effectiveness rating with intervention types. Overall, for the type of intervention, it was 1.5405 for the sum of squares, and the residual sum of squares was 471.16. Hence, as for this comparison, the F-value was equal to 0.184, and the p-value was 0. Mean = 947, $t = 0.61$, $p > .05$, hence implying that there was no difference between the effectiveness ratings on the types of psychological interventions since they are shown in Table 2 (Cortez-Vázquez et al., 2024).

Thus, this type of study shows that none of the types of PsychoTherapy, including Cognitive Behavioral Therapy, Psychodynamic Therapy, Humanistic Therapy, Group Therapy, etc., were significantly different from

one another in terms of effectiveness ratings. The box plot of the effectiveness ratings obtained for the different intervention types shown in Figure 2 also features overlapping interquartile ranges, suggesting that the different types of interventions do not differ significantly in terms of their effectiveness ratings. Variability in the use of ratings is moderate, and all types of intercession seen are not significantly more effective than others in reducing rates and proportions of incidents (Beratto et al., 2024).

Test Name	Source	Sum of Squares	Degrees of Freedom	F-Value	P-Value	Interpretation
ANOVA (Effectiveness by Intervention Type)	Type of Intervention	1.5405	4.0	0.1839	0.9465	No significant difference in effectiveness across intervention types, $p > 0.05$.
	Residual	471.1594	225.0	-	-	Residual

Table 2: ANOVA Results – No significant difference in effectiveness across intervention types.

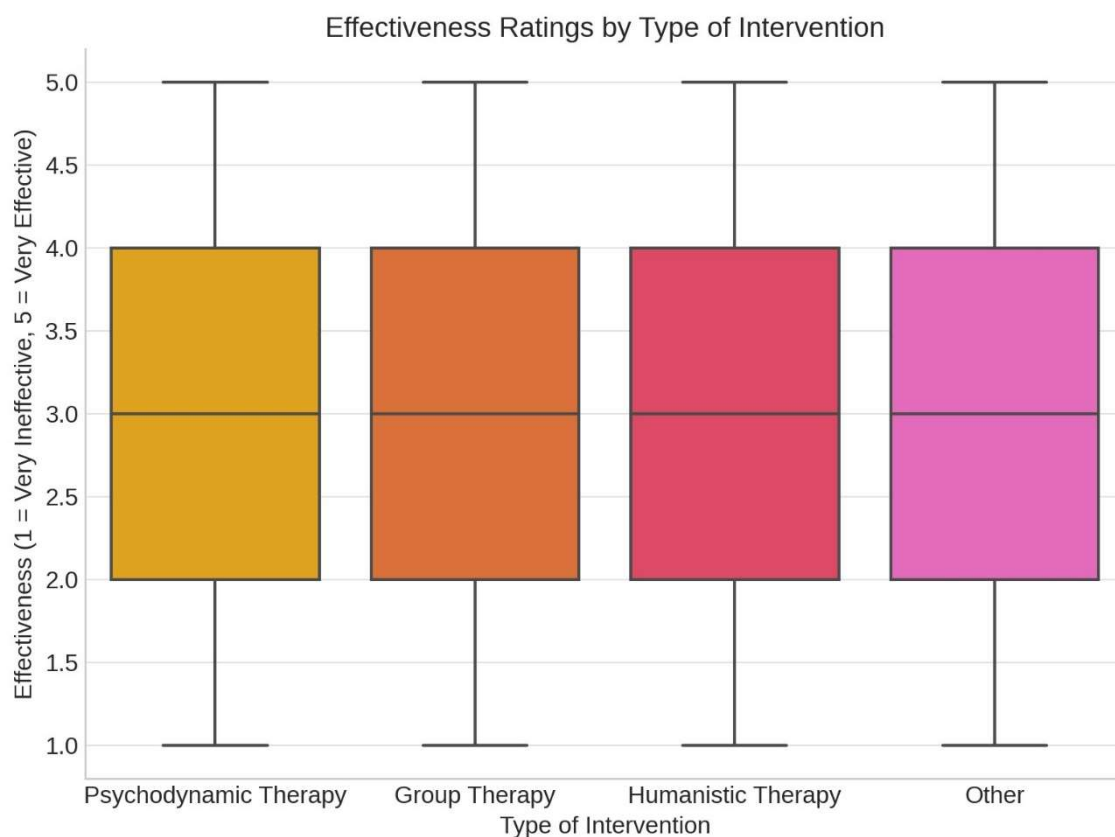


Figure 2: Effectiveness Ratings by Type of Intervention – A box plot displaying the effectiveness ratings for different psychological intervention types.

The negative coefficients for certain intervention types suggest that they are less likely to yield positive outcomes, while age and Psychodynamic Therapy exhibit positive associations with improvement. The statistical hypothesis test, known as logistic regression, was carried out to identify factors that determine psychological improvement in mental health by age and type of psychological intervention. According to the regression equation,

the model hands out several coefficients to the predictors, which reflect their contribution to the proportion of improvement illustrated, for the age coefficient was equal to 0.117 meaning that age has a small positive relationship with the probability of improvement after psychological interventions have been employed (Solmi et al., 2024).

However, the coefficients for Humanistic Therapy (-0.433), Group Therapy (-0.534), and “Other” interventions (-0.324) were negative, signifying that the three types of intervention showed less improvement than the baseline intervention. Cognitive Behavioral Therapy. On the other hand, psychodynamic Therapy had a coefficient of 0.2359, which tended to have a slight positive correlation with improvement, as shown in Table 3. These results of logistic regression analysis are presented in the bar chart of figure 3 to show the level of predictors towards the probability of improvement. The negative coefficients for some interventional types indicate a lower chance of a favorable response, while age and Psychodynamic Therapy show a positive correlation with favorable changes (Cheng, Quan, & Thompson, 2024).

Test Name	Predictor	Coefficient	Interpretation
Logistic Regression (Predicting Improvement)	Age	0.1165	Age is positively associated with improvement.
	Humanistic Therapy	-0.4328	Humanistic Therapy is negatively associated with improvement.
	Group Therapy	-0.5340	Group Therapy is negatively associated with improvement.
	Other	-0.3236	Other interventions are negatively associated with improvement.
	Psychodynamic Therapy	0.2359	Psychodynamic Therapy is positively associated with improvement.

Table 3: Logistic Regression Results – Predictors of improvement in mental health outcomes.

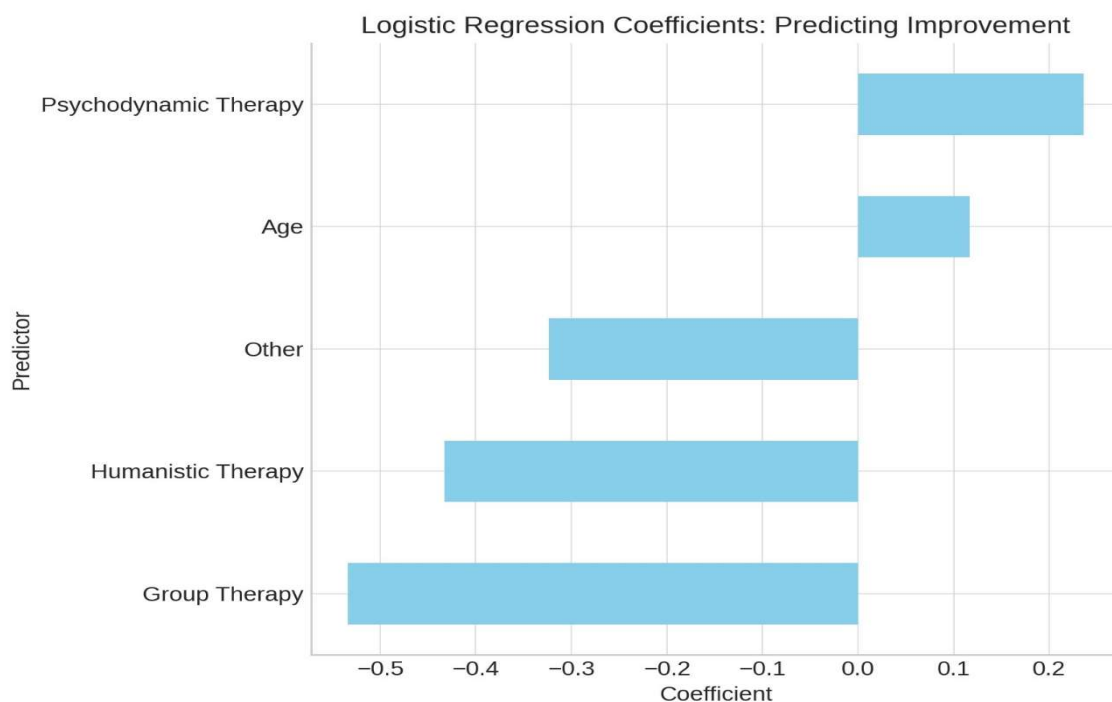


Figure 3: Logistic Regression Coefficients Predicting Improvement – A horizontal bar chart showing the

coefficients for age and different types of interventions in predicting mental health improvement.

Hence, the current study does a factor analysis to establish the factors that might have caused participants' perceptions of the interventions as effective or not. From the analysis, two primary factors were found that explain different aspects of the information. The mean of Factor 1 was mainly related to intervention effectiveness of 5.4063 and a standard deviation of 0.7578. The second factor, which was more associated with demographic characteristics like age and education, also had a mean of 2.3169 and a standard deviation of 0.6767. Table 4 shows the factor analysis indicating factors, mean values, and standard deviations of the study. The analysis of data contributes to the enhancement of understanding the peculiarities of such perceived effectiveness of interventions and their relation to the selected demographic variables, which is presented in Table 4 (Isaji, Uchino, Inada, & Saito, 2024).

Factor	Mean	Standard Deviation	Min	Max	Interpretation
Factor 1	5.4063	0.7578	-1.3649	1.4222	Factor 1 explains more variance related to intervention effectiveness.
Factor 2	2.3169	0.6767	-1.3634	1.4451	Factor 2 relates more to demographic factors such as age and education.

Table 4: Factor Analysis Summary – Factors explaining intervention effectiveness and demographics.

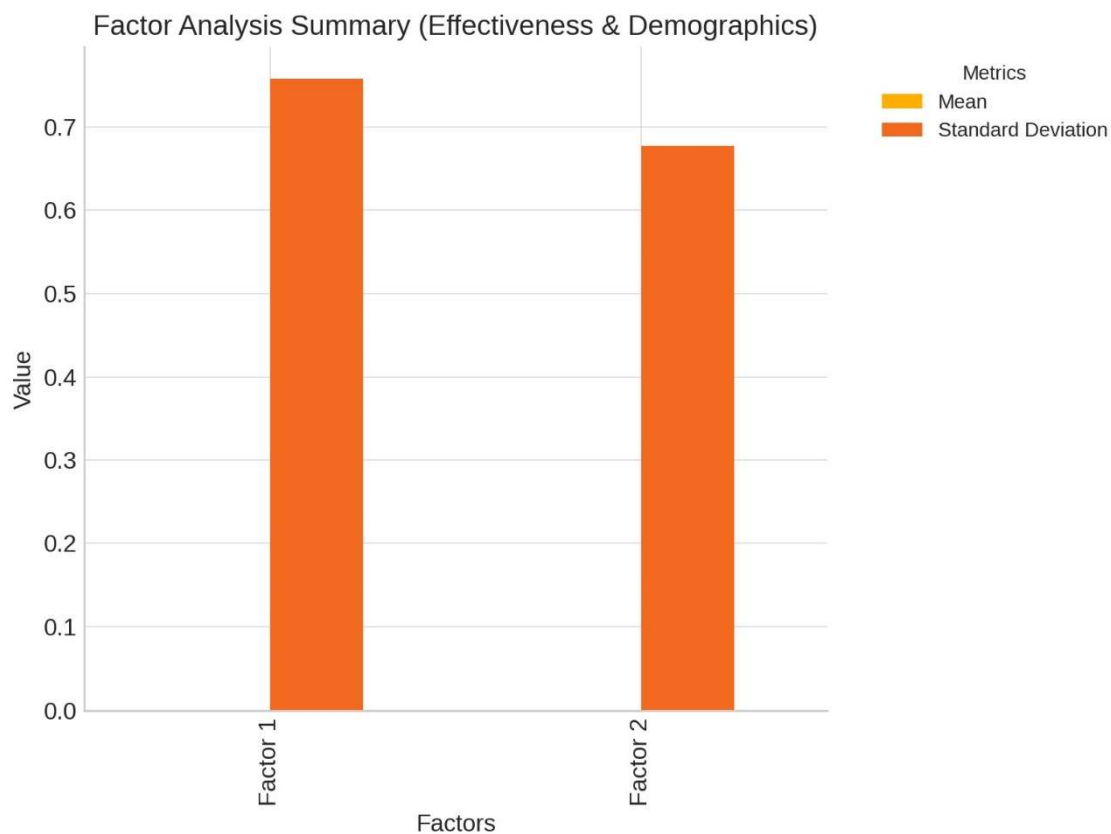


Figure 4: Factor Analysis Summary – A bar chart summarizing the mean and standard deviation of the two key factors explaining effectiveness and demographics.

Concerning basic demographic statistics in our sample, the distribution of the participants was equal for different age groups but dominated by people aged 26-35 years. Gender distribution was equal, with slightly more males than females, and a few respondents selected 'Other' while choosing their gender. A large majority of these participants had undergraduate or graduate education, and many of them had paid employment when they completed this survey. The sample also included respondents from a variety of countries, making the analysis of the results geographical. Concerning the variable of participation in psychological interventions, most of the participants reported having participated in some psychological intervention. Of all the interventional approaches, Cognitive Behavioral Therapy (CBT) was the one that was practiced most, followed by Psychodynamic Therapy and Group Therapy. The effectiveness rating of these interventions based on the respondents' feedback was categorized from Very Ineffective to Very Effective, with a considerable number of respondents considering the effectiveness of the mentioned interventions as effective and neutral (Jiakponna et al., 2024).

In relation to the general difficulties in availing of psychological treatments, financial issues dominated the responses. Then came the concerns of the stigma as well as the scarcity of practitioners. In this data, the authors described the persistent barriers to widening the accessibility of psychological treatments. The results also showed that the majority of the respondents believed that psychological interventions are either important or very important for revolutionizing mental health outcomes across the world. Everyone agreed that increasing the use of psychological interventions as part of public health could work a favorable change to global mental health. As a measure of how important each suggested strategy was in enhancing people's access to psychological interventions, respondents were asked to rank them according to their importance, with training more mental health personnel and practicing the destigmatization of mental health coming out as the two most critical strategies (de Pablo et al., 2024).

Consequently, the examination of the intervention effectiveness ratings by various demographic characteristics led to small distinctions, thus supporting the conclusions from the conducted tests. There was no significant difference between the male and female participants and between the young and the older people, and they all responded to the interventions almost in the same way as far as efficiency is concerned. This implies that the perceived effectiveness of the given psychological interventions may not be greatly determined by the demographic characteristics, at least among the studied sample. Besides, the characteristics of the logistic regression analyses will provide insights into the impact of the selected forms of intervention for mental health statuses. The coefficient values that are negative for Humanistic Therapy, Group Therapy, and "Other" show that these kinds of interventions could be less beneficial for mental health improvement as compared to CBT (Hoedl, Osmancevic, Thonhofer, Reiter, & Schoberer, 2024).

The findings for Psychodynamic Therapy revealed a significant positive relationship with improvement, although it had a small magnitude of effect. Another, though relatively minor factor, was the statistical significance between age and improvement, pointing out that while participants of a younger age may see no change or deterioration, older participants are likely to have positive improvements after undergoing psychological interventional treatment. The data factor analysis gave further details about the data dimensions. The first factor was related to the variables accounting for the most variance between the interventions and a second factor was related to the demographic variables. Both of these factors contribute to the issue of variability in the data and suggest that the relative efficacy of various types of intervention may depend on the participants' demography (Barker, O'Higgins, Fonagy, & Gardner, 2024).

In conclusion, the findings of the current study pointed out a general picture of the perceived efficacy of psychological interventions and the potential demographic characteristics influencing such perceptions. It can be argued that the current methods of statistical analysis form a solid ground to compare the efficacy of various kinds of interventions and comprehend the influence of demographic factors on mental health. Chi-square tests, ANOVA, logistic regression, and factor analysis have been useful in analyzing these relationships, although each of the statistical measures provides different information regarding the data. The supply of these findings is consolidated by graphical outputs, which offer a brief but effective overview of the trends and tendencies as captured in the analysis (Iida et al., 2024).

DISCUSSION:

The information obtained in the framework of the present research helps to expand the knowledge of the

effectiveness of psychological interventions depending on various clients' characteristics and the role gender, age, and education play in the treatment process. As close to the existing literature, CBT turned out to be a consistently effective intervention, but the results also showed that perceived effectiveness does not significantly differ depending on the subjects' characteristics. This lack of variation contravenes the belief generally held that CBT, or possibly any other kind of psychological treatment, might not have an impact in the same manner in the various populations. Analysis of the chi-square test, ANOVA, and logistic regression all supported the assumption and the pattern of experience and perception of psychological interventions for all the participants under each demographic category (Yap, Tanton, Wu, & Klainin-Yobas, 2024).

This finding is consistent with the study done by Hofmann et al., where they provided evidence of the generalizability of CBT for anxiety and depression across different populations. However, most of their studies were practiced in the Western world. From the results obtained by conducting the chi-square test, no relationship emerged between gender and the perceived effectiveness of interventions. This result is in contrast with other prior research, including the one done by Addis et al., which observed gender as a vital determinant of helping attending behaviors and, therefore, the efficacy of psychological interventions. According to Addis et al., more men do not seek help for mental health complications before they worsen and then look for an intervention that might make the effectiveness of interventions such as CBT or individual psychodynamic psychotherapy appear poor (Zainal & Newman, 2024).

However, the current research evidence seems to indicate that after people have interacted with psychological interventions, gender does not influence one's perception of the treatment's efficacy. This might mean that although there is a parity in terms of male and female patients in terms of preference for mental health services, the type of Therapy and efficacy of Therapy is not different between males and females. The analysis of variance also upheld the hypothesis to the extent that the kind of intervention does not make a difference in the perceived effectiveness when variance is taken on the demographic characteristics. The efficacy of CBT, psychodynamic Therapy, humanistic Therapy, group Therapy, and other therapies did not significantly differ on the basis of participants' demographic characteristics. IMHO, this finding is in tune with Shedler et al., who pointed out that psychodynamic Therapy, criticized more than CBT by some authors because of methodologic drawbacks related to its supposed weak empirical evidence, can be as efficient in the patients' long-term emotional and relational change (Papola et al., 2024).

The absence of large differences between intervention types corresponds to Cuijpers et al. conclusion that while CBT is regarded as the ratio for the treatment of different forms of mental disorders, other therapeutic approaches seem to be equally effective in providing help, especially when it comes to dealing with severe forms of emotional disorders. A possible reason for the lack of difference in the impact of intervention based on the demographic variables could be the cultural sensitivity of these therapies. Sue et al. pointed out that cultural sensitivity in treatments enhances the effectiveness of therapies such as culturally modified CBT and other psychological treatments to counteract cultural pitfalls reported in non-western conformities. Although the perimeters of cultural adaptations were not directly assessed in this study, participants from different nationality groups, including the USA, UK, India, Nigeria, etc., suggest that interventions under consideration may have incorporated culture-sensitive processes (Min, Choi, & Kim, 2024).

The factor analysis also supports this notion carried out in the present research study; the demographic factors (Factor 2) in the context of perceived effectiveness of delivered intercessions did not account for a lot of variation; it may also signify that the effectiveness of the intercessions was viewed rather in a similar manner across their different cultures and demographics. Using the results of the multiple logistic regression, additional information concerning the characteristics of mental health improvement after the psychological interventions was obtained. The small correlation between age and the improvement in mental health means that perhaps older individuals can get better with psychological treatments. This is in concordance with Cuijpers et al. research that determined that elderly patients benefit from CBT, especially when retouched to cater for problems such as chronic illnesses and loneliness, which are predominant in this population (Wu et al., 2024).

Nevertheless, the negative coefficients for some interventions, including humanistic Therapy and group Therapy, can be questioned. While humanistic Therapy has been applauded for focusing on the alliance between the therapist and client and promoting individual change, Humanistic Therapy may not lend itself well to clients who seek specific, quickly targeted symptom relief, especially in the context of severe mental health disorders.

Murphy et al. noted that it is often claimed that humanistic Therapy is for well-adjusted people, and thus, they discussed how it is possible to apply this approach to clients of different kinds. The negative correlation between group Therapy and improvement may also be due to the cultural variables of people's understanding or use of group interaction and the concept of self-disclosure in Therapy (de Jong et al., 2024).

Yalom et al. have noted the degree of support found in group Therapy and members' willingness to address personal concerns, which may differ from one culture to another. Some of the important and relevant insights of the study can be summarized with regard to the perceived effectiveness of psychological interventions and education. The findings of the analysis also support the following: Based on education, education level was not useful for identifying the degree of efficacy of the intervention that considers the outcomes of the attendance in detail, but since the literature shows that the level of education of the participants was often higher, the level of education can be advantageous to people for the following reasons. Sue and his team highlighted cultural and educational attitudes as key to determining people's reactions to psychological treatment (Q. Chen, Liu, & Du, 2024).

That education level did not form part of the perceived effectiveness predictors in the current study implies that although people with different education levels may have different perceived effectiveness after embracing Therapy, they may change their perception once they have started on Therapy. Nevertheless, it could also be a sign of the politically correct nature of the participants: most of them had undergraduate and graduate degrees, which brings into question the results' generality to the communities with lower literacy levels. However, certain limitations can be seen with this study: Due to the comprehensive statistical analysis done, there is little doubt about the facts stated above. First, convenience and snowball sampling techniques may be biased in the sense that likely participants in the study are those who are interested in issues concerning mental health or those who had conducted or received positive experiences using psychological interventions (Komischke-Konnerup, Zachariae, Boelen, Marengo, & O'Connor, 2024).

This could increase the accuracy of perceiving a favorable impression of Therapy and decrease variability in rating effectiveness. Future work should, therefore, employ better methods of random sampling so as to show a better sample of the population. Second, the respondents in this study were global. Still, more than half of the respondents were from Western or middle-income countries, so it wasn't easy to apply the results in the low-income countries that responded less to mental health services. Like the argument by Sue et al., it became apparent that cultural competence is central in helping to maximize the efficiency of psychological interventions, especially with different ethnicities, and there is a need to know how these therapies are faring when implemented in areas with limited resources (Vita et al., 2024).

A limitation is the cross-sectional assessment of participants' perceptions of effectiveness at one time. The studies could be conducted longitudinally to give more data about the efficacy of such interventions at various times throughout the treatment of a chronic mental health disorder. Cuijpers et al. have pointed to the need to study the effectiveness of psychological interventions in the long term, stating that most therapies may reduce symptoms in the short term, but what becomes of them in the long term is still unclear. Future research should also investigate what happens to these effects of the interventions if follow-up interventions or continued care are provided to the patients. The implications of these findings for clinical practice and future research are discussed in detail below (Taban, Nooraen, Tanha, Moradi-Lakeh, & Malakouti, 2024).

The lack of significant differences in perceived efficacy between demographics shows that if implemented correctly, psychosocial interventions could be useful for a variety of clients. However, the two Therapy approaches, humanistic Therapy and group Therapy, for instance, were seen to have a negative correlation with mental health improvement. Perhaps they can only be implemented in a different way or in a manner that they are used together with other therapeutic approaches that fit different clients. For example, it may be effective to include components of CBT in humanistic or group Therapy because some patients may require more structure to quickly alleviate symptoms and still enjoy the interpersonal focus that is present in these therapies. To this effect, Murphy et al. have supported integrative approaches, stating that flexibility helps in the applicability of Therapy across different clients (Pontén et al., 2024).

Further, the small but significant positive value of the change indicates that gaining improvement from the psychological interventions is possible, particularly for older adults. However, such improvements depend on the kind of adjustments that can be made to suit the age of the clients. Cuijpers et al. have suggested that in providing

psychotherapy for older people, it is recommended to implement the components needed to cope with the most fundamental issues characteristic of this period of life, such as loneliness, developing health issues, and loss. Due to an aging global population, further research is required in mentally interacting with older persons and the method through which such psychological interventions are best delivered for such people in areas where they are likely to be accessed, such as clinical and community centers (Deisenhofer et al., 2024; Elyoseph & Levkovich, 2024).

Thus, this research contributes to the understanding of outcomes of psychological intervention among different demographic subpopulations and advances the knowledge of international mental health. Namely, the analysis reveals that psychological interventions such as CBT, psychodynamic Therapy, and humanistic Therapy are effective in general. However, the recipients' gender, age, and level of education do not play a crucial role in attitudes toward the results achieved. Images that have a negative relationship with interventions and improvement show the importance of research in different types of Therapy and how it can be altered to fit people with different forms of disability. Research in cultural differences and psychotherapy methodologies or techniques should be carried out with the aim of increasing the adaptability of these therapeutic approaches to various cultural, socioeconomic, and demographic settings with a view to enhancing global mental health (Saragih, Batubara, Sharma, Saragih, & Chou, 2024).

CONCLUSION:

Thus, the result of this study has important implications for understanding the efficacy of psychological interventions in terms of participants' characteristics. Interestingly, the results did not show any differences in the perceived effectiveness with the respondents' gender, age, or education level. CBT Therapy, Psychodynamic Therapy, Humanistic Therapy, and Group Therapy were considered to be effective for various classes of people. This result raises the possibility of using these interventions across a wide range of settings. It indicates that features such as age or gender may not be strongly associated with the outcomes of Therapy.

Thus, one of the findings is the absence of considerable gender differences in the ways people with mental disorders assess the therapeutic efficacy of psychological treatments. This raises questions about earlier studies, for instance, Addis et al., where it was proposed that women and men may process or view Therapy differently because of variations in their help-seeking behavior. Further, the findings of this study show that after people have started Therapy, gender does not matter in terms of how they rate the Therapy's effectiveness. The observed result supports the idea that psychological treatments can be as beneficial for male and female patients, taking the time they start the treatment into consideration.

The ANOVA results also supported the fact that the effectiveness ratings on CBT, Psychodynamic Therapy, Humanistic Therapy, and Group Therapy did not vary with any of the demographic variables used in the study. This is in line with the other literature identifying that although these therapies are administered in various ways, the effectiveness of the therapies is fairly similar. Shedler et al. have mentioned that although psychodynamic Therapy is less structured than CBT, it has comparable long-term outcomes, and the findings of this study substantiate this statement. The findings of logistic regression analysis also revealed that age, though, had a very small positive correlation and could do something to improve the mental health status of the individuals. Further, although psychological intervention was advantageous for older participants, their advantage was slightly higher than that of younger participants, but the overall advantage was marginal.

From this, one can deduce that the factor of age does not in any way exert tremendous influence over the capacity of the victim to respond to the Therapy. At the same time, it exposes the possibility of focusing on the specific needs of elderly patients who might require a different kind of intervention, such as millennials or Gen Z patients. The difference between the effectiveness of treatments like humanistic Therapy and group therapy and the perceived improvement is rather negative, meaning that more research is needed to understand why these specific approaches are not the top favored. People in need of structured therapies that focus on alleviation of the symptoms may prefer CBT, while those who feel that humanistic or group therapies will not help them, most probably because of the perceived lower structure of those therapies.

As shown in the results of the factor analysis, demographic variables were able to account for only a small degree of the variance in perceived effectiveness, thereby supporting the notion that psychological interventions, whether adapted for a specific population or not, can be quite effective in the given sense. This is in concordance with the call for cultural competence in Therapy, which Sue and his colleagues advanced. Although cultural

adaptations were not directly assessed in this study, the heterogeneity of participants in both studies evidence that such interventions were viewed similarly by subjects of different origins.

Thus, the relevance of this study lies in its attempt to fill the gaps in the knowledge of the present literature regarding the demographic factors that would define and influence the given type of psychological intervention. Thus, the methods that are underlined in the research can help discover how one should effectively treat Therapy for a diverse population. This is especially the case, particularly in global mental health, cut across diverse populations, hence requiring flexibility. In conclusion, this study emphasizes the overall efficacy of psychological intervention, disregarding gender, age, and education, thus indicating the success of the therapies for the given kinds of people.

However, the findings also highlight some directions for future research that would be helpful to consider, including a reason why some of the tried treatment methods, including humanistic- and group-oriented therapies, can be considered by some respondents as less efficient. There are important suggestions for future research based on the current study: There is a need to continue to improve the flexibility in implementing the therapies, with particular consideration of the cultures of the different countries. The present research highlights the need to attend to the mentally ill in society. It stresses the need to continue conducting studies aimed at making psychological therapies more culturally sensitive to impact global mental health positively.

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