

Research Article

The Effectiveness of Model of Human Occupation-Based Occupational Therapy Intervention for Women who Experienced Domestic Violence

İnsan Aktivite Modeli Temelli Ergoterapi Müdahalesinin Aile İçi Şiddet Yaşayan Kadınlarda Etkinliği

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ABSTRACT

Purpose: Experiences of violence negatively affect women's independence and daily activities. The aim of this study was to investigate the effectiveness of the "Model of Human Occupation (MOHO)"-based occupational therapy intervention on the occupational competence and occupational participation of women affected by domestic violence and living in a women's shelter. **Material and Methods:** The MOHO-based occupational therapy program, which includes 10 intervention areas, was applied to 13 women in two women's shelters. Four-week (16 sessions) individual and group training and environmental interventions were provided. Participants' occupational competence was assessed with the "Occupational Self-Assessment" and occupational participation with the "Model of Human Occupation Screening Tool". Assessments were conducted before the intervention, after the intervention, and at the 3-month follow-up. **Results:** Statistically significant differences were found in occupational competence ($p=0.002$) and occupational participation ($p=0.004$) between pre-intervention and 3-month follow-up assessments. Improvements were noted in all domains (OSA-competence, and volition, habituation, communication-interaction, process skills, and environment parameters of MOHOST) ($p<0.05$), except for the domains of OSA-value and MOHOST-motor skills ($p>0.05$). **Conclusion:** MOHO-based occupational therapy interventions delivered in women's shelters could have a positive impact on the occupational competence and occupational participation of women experiencing violence.

Keywords: Occupational therapy; Domestic violence; Model of human occupation.

ÖZ

Amaç: Şiddet deneyimi kadınların bağımsız yaşam becerilerini ve günlük aktivitelerini olumsuz etkilemektedir. Bu çalışmanın amacı, "İnsan Aktivite Modeli (Model of Human Occupation-MOHO)" temelli ergoterapi müdahalesinin aile içi şiddete maruz kalan ve sığınma evinde kalan kadınların okupasyonel yeterliliklerine ve okupasyonel katılımlarına etkisinin araştırmaktır. **Gereç ve Yöntem:** İki sığınma evinde kalan 13 kadına, 10 müdahale alanı içeren MOHO-temelli ergoterapi programı uygulandı. Dört haftalık (16 seans) bireysel ve grup eğitimleri ve çevresel müdahaleler gerçekleştirildi. Bireylerin okupasyonel yeterlikleri "Aktivite Öz Değerlendirmesi" ile, okupasyonel katılımları ise "İnsan Aktivite-Rol Modeli Tarama Aracı" ile değerlendirildi. Değerlendirmeler müdahale öncesi, sonrası ve 3. ay takipte yürütüldü. **Sonuçlar:** Müdahale öncesi ve 3 aylık takip değerlendirmeleri arasında okupasyonel yeterlilik ($p=0,002$) ve okupasyonel katılımı ($p=0,004$) istatistiksel olarak anlamlı farklılıklar bulundu. OSA-önem ve MOHOST-motor beceriler alanları hariç ($p>0,05$) tüm alanlarda (OSA-yeterlilik ve MOHOST'un irade, alışkanlık, iletişim-etkileşim, süreç becerileri ve çevre parametreleri) iyileşmeler kaydedilmiştir ($p<0,05$). **Tartışma:** Sığınma evlerinde gerçekleştirilen MOHO temelli ergoterapi müdahaleleri, şiddete maruz kalmış kadınların okupasyonel yeterlilikleri ve okupasyonel katılımları üzerinde etkili olabilir.

Anahtar Kelimeler: Ergoterapi; Aile içi şiddet; Kadınlar; İnsan aktivite modeli.

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The experience of violence negatively impacts women's independent living skills and their participation in daily activities. Women exposed to violence experience difficulties in areas such as job performance, educational participation, home management, parenting, leisure activities, money management, initiating tasks, self-confidence, coping skills, stress management, interpersonal relationships, and high-level cognitive functioning (e.g., decision making, judgment, problem-solving, and following commands) (Gorde, Helfrich and Finlayson, 2004; Helfrich and Rivera, 2006; Javaherian, Krabacher, Andriacco et al., 2007; Carlson, 1997; d'Ardenne and Balakrishna, 2001; Levendosky and Graham-Bermann, 2001; Monahan and O'Leary, 1999; Helfrich, Aviles, Badiani et al., 2006). Hence, domestic violence (DV) creates occupational injustice by limiting women's physical and mental health and their freedom of occupational choice (Gorde et al., 2004; Cage, 2007; Javaherian-Dysinger, Krpalek, Huecker et al., 2016).

An important pillar in the fight against violence against women is the women's shelters, which aim to keep women and their children affected by violence out of the environment of violence and to support them in their struggle for a new life. A women's shelter is an ideal environment to empower women and develop skills that can prevent them from becoming homeless (Helfrich and Aviles, 2001). It has been reported that while women's shelters provide housing, financial, and legal support to survivors of domestic violence, important life skills can be overlooked (Helfrich et al., 2006). Occupational therapy intervention aims to "empower women exposed to violence through activities" and improve the supportive nature of the environment. When working with this group, using the Model of Human Occupation (MOHO) is recommended as it considers each person's personal values, interests, roles, responsibilities, and environmental contexts (Helfrich and Aviles, 2001). The process of empowerment with the occupational justice perspective in occupational therapy focuses on people's ability to choose who they want to be and what they want to do, the presence of their opportunities, and the ability to act according to those demands (Hammell, 2016). Personal and environmental interventions are implemented with the power of a client-centred approach.

Intervention studies of occupational therapy for women who have been exposed to DV are limited. Although studies have shown an increase in the occupational performance of women who have

experienced DV after intervention (Helfrich and Rivera, 2006; Helfrich et al., 2006; Gutman, Diamond, Holness-Parchment et al., 2004), to our knowledge, there is no study examining the effects of a MOHO-based intervention on occupational competence that includes a follow-up evaluation.

In this study, we aimed to examine the effectiveness of MOHO-based occupational therapy intervention for women experiencing domestic violence and residing in women's shelters. We hypothesized that the intervention would increase women's occupational competence and participation.

METHODS

Participants

This study was conducted in "Çankaya Municipality Women's Shelter" and "Ankara Metropolitan Municipality Women's Shelter" in Ankara /Turkey between August and November 2017. The inclusion criteria were that participants were between 18 and 65 years old, had experienced physical violence by their husbands at least once, and volunteered to participate in the study. The exclusion criterion was residence in a women's shelter for reasons other than domestic violence. The study started with 23 women who met the inclusion criteria. However, 10 of them were unable to participate in the intervention program because they left the shelter or transferred to another facility. All interventions and assessments were conducted with 13 women who were placed in the women's shelters Çankaya Municipality Women's Shelter (n = 7) and Ankara Metropolitan Municipality Women's Shelter (n = 6), and the results were analyzed.

Research Design

An uncontrolled single-group pretest-posttest design was used to measure the effectiveness of the intervention. Data for the study were collected in three phases: Pre-intervention interviews (Assessment 1 [A1]), Post-intervention interviews (Assessment 2 [A2]), and 3rd-month interviews (Assessment 3 [A3]). A1 and A2 were conducted face-to-face in shelter rooms. A3 was conducted face-to-face in the women's current environment. Each interview lasted 45-60 minutes.

Instruments

The following evaluation instruments and methods were used to plan the occupational intervention and investigate its effectiveness:

"The Sociodemographic Form" was used to obtain information on age, education level, marital

status, telephone number, number of children (if any), job, work status, income, health problems, date, and reason for moving into the shelter.

The "Occupational Self Assessment (OSA) Version 2.2." was used to examine the occupational competence of individuals. OSA is a MOHO-based and client-centered assessment tool. Individuals evaluate how well they perform activities on a 21-item scale (1 = I have a lot of problems doing this, 4 = I do this extremely well) and the value of these activities (1 = This is not so important to me, 4 = This is most important to me). After answering questions related to competence (Step 1) and value (Step 2), they select the areas that they want to change most (Step 3) (Baron, Kielhofner, Iyenger, Goldhammer et

al., 2006; Pekçetin, Salar, İnal et al., 2018).

The "Model of Human Occupation Screening Tool (MOHOST) Version 2.0" was used to examine volition (motivation for occupation), habituation (patterns of occupation), performance capacity (communication-interaction, process, and motor skills), and environmental influences on the individual's occupational participation (Parkinson, Forsyth and Kielhofner, 2006; Zakarneh, 2015). Low scores indicate that participation is restricted.

Intervention Protocol

The problem areas that participants indicated they wanted to change in the OSA formed the basis for the occupational intervention program (Table 1).

Table 1. Occupational problem areas according to Occupational Self Assessment.

| Concepts | Items | n | % |
|--|--|----|----|
| Skills/Occupational Performance | Managing my finances | 11 | 85 |
| | Physically doing what I need to do | 6 | 46 |
| | Identifying and solving problems | 4 | 31 |
| | Expressing myself to others | 3 | 23 |
| | Concentrating on my tasks | 3 | 23 |
| | Taking care of others for whom I am responsible | 2 | 15 |
| | Getting where I need to go | 2 | 15 |
| | Managing my basic needs (food, medicine) | 1 | 8 |
| | Getting along with others | 1 | 8 |
| Habituation | Being involved as a student, worker, volunteer, and/or family member | 11 | 85 |
| • Habits | | | |
| • Roles | Relaxing and enjoying myself | 7 | 54 |
| | Having a satisfying routine | 1 | 8 |
| Volition | | 4 | 31 |
| • Personal Causation | Making decisions based on what I think is important | | |
| • Values | Working towards my goals | 3 | 23 |
| • Interests | Doing activities I like | 1 | 8 |

Note; n: number of participants, %: percentiles

Specific goals in these problem areas were combined with MOHOST, and 10 areas of intervention were identified, including money management, job search and maintenance skills, transportation, access to information, leisure, parenting, safety planning, social skills-assertiveness, cognitive skills, and pain

management.

Occupational therapy interventions for these areas were carried out for 4 weeks. Each participant received 16 hours of training (2 hours of individual and 2 hours of group training per week). The required environmental interventions were provided (Table 2).

Table 2. Intervention program.

| |
|--|
| Individual Interventions |
| <ul style="list-style-type: none"> • Money Management • Job Seeking and Maintenance Skills • Transportation • Leisure • Reaching Information (Basic Computer Skills) • Parenting • Security Planning |
| Group Interventions |
| 1st session- Introduction (Practice) |
| <ul style="list-style-type: none"> • Defining the training objectives • Creating the training calendar • Creating group norms |
| 2nd session- Stress Management (Theoretical + Practical) |
| <ul style="list-style-type: none"> • The importance of physical activity, nutrition and rest • Positive thinking • Time management • Anger management • The value of leisure • To benefit from social support systems • Humor |
| 3rd session- Stress management (Practical) |
| <ul style="list-style-type: none"> • Respiratory exercises • Relaxation exercises • Body awareness |
| 4th and 5th sessions- Social Skills and Assertiveness Training (Theoretical + Practical) |
| <ul style="list-style-type: none"> • Verbal and non-verbal communication • Giving and receiving social support • Assertiveness • Defining and expressing feelings • Building empathy • Coping with problems and conflicts • Setting limits |
| 6th session- Safety Planning and Cognitive Skills (Theoretical + Practical) |
| <ul style="list-style-type: none"> • Security Planning • Problem Solving • Decision Making • Setting Target |
| 7th session- Pain Management (Theoretical + Practical) |
| <ul style="list-style-type: none"> • Peripheral techniques • Cognitive-behavioral techniques |
| 8th session- Selected activity by the group (Practical) |
| <ul style="list-style-type: none"> • Monopoly game was played • Fun • Money management • Mother-children interaction |
| Environmental interventions |
| <ul style="list-style-type: none"> • The institutional recommendations for the functioning of the women's shelter in line with the needs of the participants (suggestions for shelter arrangement, suggestions for multidisciplinary trainings and interinstitutional cooperation for the women shelter) • The individual training on the structuring of the social networks of the participants |

The information obtained from the OSA and MOHOST assessments revealed factors that included the participants' volition, habituation, and performance capacity. Based on this information, the strengths and weaknesses of the individual were elaborated. Depending on the individual's needs, visual aids, auditory support, and repetition were individualized as part of the intervention. Cognitive training was provided for problem-solving, planning, decision-making, goal-setting, and attention. Efforts were made to achieve an impact primarily through stress management and social skills training. To increase motivation and participation in the activities, the results of all assessments were shared with the person and the strong and supportive aspects were highlighted. This approach allowed people to better understand the goals of the intervention, participate more fully in the training, and develop a therapeutic relationship.

To bring about change, the "therapeutic use of self" and "MOHO-based therapeutic strategies" (advocating, defining, giving feedback, suggesting, negotiating, structuring, developing/supporting, encouraging, and physical support) were used. At each stage of the intervention, these strategies were used depending on the type of activity and the person.

Statistical Analysis

The SPSS package program version 21.0 (IBM SPSS Statistics for Windows, version 21.0. Armonk, NY: IBM Corp.) was used for statistical analysis of the data. Mean, standard deviation, median, and minimum-maximum values were reported as descriptive statistics. The Friedman test was used for within-group comparisons and the Dunn-Bonferroni test for pairwise comparisons. The significance level was taken as $p < 0.05$. The power of the study was calculated using the Greenhouse-Geisser (GG) method and set at 94%.

RESULTS

The mean age of the participants was 36.7 ± 9 (min. 24; max. 58) years. The majority of participants were married ($n = 10$; 77%), but divorce proceedings were ongoing. Most of the participants ($n = 10$; 77%) had a primary school diploma or no education. All women had at least one child. According to the results of the pre-intervention assessment, all women who participated in the study were unemployed and actively seeking employment. It was found that four women had never worked and the others were mainly engaged in unqualified jobs and had only short or irregular work experience. The average

length of stay of the participants in the shelter was 2 months (min. 1 week, max. 12 months). The average monthly income of the participants was \$27.47 (\$0-91.55). The twelve participants (92%) lived solely on government assistance. One woman had no income because she was waiting for the state aid procedure. Thus, they were all living below the poverty line.

Eight of the 13 participants (65%) reported a health problem, and five of them were taking medication regularly. Participants reported the following health problems: low back pain ($n = 4$), cervical disc herniation ($n = 2$), asthma ($n = 2$), allergies ($n = 2$), depression ($n = 1$), diabetes ($n = 1$), dental problems ($n = 1$), aneurysm ($n = 1$), pain in the jawbone ($n = 1$), migraine ($n = 1$), hypertension ($n = 1$), cardiac arrhythmia ($n = 1$), and pain due to platinum implantation in the leg ($n = 1$).

At follow-up three months after the occupational therapy intervention, five of the 13 participants were found to have rented a house and left the shelter; one woman began living with a boyfriend; one returned to her family; and one returned to her husband. Five women were still living in the shelter. Four of the participants found regular jobs.

There was an intensive collaboration between the shelter management, staff, and the authors. At the authors' suggestion, recreational and employment classes were offered in one of the women's shelters during the intervention and in another after the intervention. Plans were made to establish a computer laboratory to meet the needs of those seeking employment and housing in the women's shelters.

The results of the statistical analysis showed that the occupational therapy intervention had a positive effect on occupational competence and occupational participation scores. However, there was no statistically significant change in "the value people attribute to the activities" or "motor skills." The comparative analysis of the assessments conducted in A1, A2, and A3 is shown in Table 3.

Table 3. Statistical analysis results.

| Parameter | A1 | | A2 | | A3 | | Sig. | Pairwise comparison | | |
|---|---------------------|------------------|---------------------|------------------|---------------------|------------------|-------------------|---------------------|---------------|-------|
| | Median (min-max) | Mean \pm SD | Median (min-max) | Mean \pm SD | Median (min-max) | Mean \pm SD | | A1-A2 | A1-A3 | A2-A3 |
| OSA Competence (21-84) | 54 (46-71) | 56.69 \pm 7.37 | 62 (53-74) | 62.03 \pm 7.02 | 63 (55-76) | 63.46 \pm 5.66 | .001** | P=.007 | P=.002 | P>.05 |
| OSA Value (21-84) | 50 (39-72) | 52.15 \pm 9.57 | 56 (44-68) | 56.23 \pm 6.95 | 51 (42-76) | 53.23 \pm 9.85 | .302 | P>.05 | P>.05 | P>.05 |
| MOHOST Motivation for occupation (Volution) (4-16) | 10 (6-16) | 11.15 \pm 2.93 | 12 (7-16) | 12.23 \pm 2.77 | 13 (7-16) | 12.38 \pm 2.69 | .049* | P>.05 | P>.05 | P>.05 |
| MOHOST Pattern of occupation (Habituation) (4-16) | 10 (6-15) | 10.92 \pm 2.53 | 12 (8-15) | 11.84 \pm 2.03 | 13 (9-16) | 12.61 \pm 2.25 | .026* | P>.05 | P=.043 | P>.05 |
| MOHOST Communication- interaction skills (4-16) | 9 (8-16) | 10.84 \pm 2.7 | 11 (9-16) | 11.84 \pm 2.37 | 11 (9-16) | 12.07 \pm 2.36 | .001** | P=.018 | P=.013 | P>.05 |
| MOHOST Process skills (4-16) | 10 (7-14) | 10.76 \pm 2 | 11 (8-16) | 11.69 \pm 2.25 | 12 (11-15) | 12.38 \pm 1.38 | <.001** | P=.043 | P=.001 | P>.05 |
| MOHOST Motor skills (4-16) | 13 (8-15) | 12.38 \pm 2.14 | 13 (9-16) | 12.61 \pm 1.98 | 13 (9-16) | 13 \pm 2.19 | .063 | P>.05 | P>.05 | P>.05 |
| MOHOST Environment (4-16) | 8 (5-12) | 8.15 \pm 1.95 | 9 (5-13) | 9.15 \pm 1.99 | 9 (7-11) | 9.38 \pm 1.44 | .006** | P>.05 | P>.05 | P>.05 |
| MOHOST Total (24-96) | 62 (50-80) | 64.23 \pm 8.72 | 69 (55-85) | 69.38 \pm 8.84 | 73 (55-83) | 71.84 \pm 8.79 | .001** | P=.004 | P=.004 | P>.05 |

Note; A1: Pre-intervention assessment, A2: Post-intervention assessment, A3: Follow-up assessment; SD: Standard Deviation, min: minimum, max: maksimum, OSA: Occupational Self Assessment, MOHOST: Model of Human Occupation Screening Test, *p<.05 **p<.01; The Friedman test was used for intra-group comparisons, the Dunn-Bonferroni test was used for pairwise comparisons.

Occupational Competence and Value

A statistically significant difference was found for the competence parameter of OSA according to the 3-time assessment of the Friedman analysis ($p < 0.01$). As a result of the pairwise comparisons, this difference was found to be caused by the change in both A1-A2 and A1-A3 scores ($p < 0.05$). There was no statistically significant difference in the comparisons of occupational values ($p > 0.05$).

The results indicate that occupational therapy intervention has a positive effect on occupational competence in the short and long term and that the change persists after the intervention is completed. However, there was no effect on the value participants placed on the activities.

Occupational Participation

There was a statistically significant difference between the 3-time evaluations according to the total scores of the MOHOST ($p < 0.01$). In the pairwise comparison, this difference was found in both A1-A2 and A1-A3 assessments ($p < 0.05$). The results obtained indicate that the intervention has a positive effect on occupational participation. This effect was observed after the intervention and persisted until 3rd month.

The results for the parameters of MOHOST are as follows:

A statistically significant difference was found when analysing the "process skills" and "communication-interaction skills" assessments ($p < 0.01$). In pairwise comparisons, these differences were found between the two assessments A1-A2 and A1-A3 ($p < 0.05$). Consistent with the results, it can be said that the intervention had a positive effect on process and communication- interaction skills and that this development persisted after the intervention.

A statistically significant difference was found when analysing the data in the areas of "motivation for occupation (volition)" and "environment" ($p < 0.05$ and $p < 0.01$, respectively). However, there was no difference between times in pairwise comparisons ($p > 0.05$). Although it was found that the intervention had a positive effect on motivation by supporting the individual's occupational participation and increasing the supportive effect of the environment, detailed information on the time interval of development in these areas could not be obtained.

When analysing the "pattern of occupation (Habituation)" subtest, a statistically significant difference was found ($p < 0.05$). This difference was found between assessments A1-A3 ($p < 0.05$). These results suggest that the effects of the intervention on

participation and skills may become habitual patterns in the long term. It was determined that the interventions used in this study had no effect on the women's "motor skills." Although no statistically significant difference was found ($p > 0.05$), the increase in mean scores could be clinically significant.

DISCUSSION

The current study demonstrated that a MOHO-based occupational therapy intervention for women exposed to DV can have a positive impact on occupational competence and occupational participation.

There are few studies in the literature examining the effectiveness of occupational therapy interventions for women who have been subjected to DV (Helfrich and Rivera, 2006; Helfrich et al., 2006; Gutman et al., 2004). While there have been studies of shelter interventions for people experiencing homelessness and mental health issues (Marshall et al., 2021; Muñoz, Reichenbach, and Hansen, 2005; Muñoz, Dix, and Reichenbach, 2006; Helfrich and Fogg, 2007; Thomas, Gray, and McGinty, 2011), few studies have focused on women exposed to violence as a separate group (Helfrich and Rivera, 2006; Helfrich et al., 2006; Gutman et al., 2004). The two studies in the literature used a single module for women exposed to violence and found that occupational intervention affected money management (Helfrich et al., 2006) and employment skills (Helfrich and Rivera, 2006). Gutman et al. (2004) applied a comprehensive intervention program to women living in homes and communities who had cognitive problems due to possible brain injury. Achievements expressed by participants included anger and stress management, safety planning, assertiveness, money management, vocational and academic skills, and exploration of recreational opportunities (Gutman et al., 2004). Our results also suggest that occupational involvement increased after the intervention. The results of the current study are consistent with the literature and suggest that occupational therapy intervention can help improve occupational competence and that improvements may persist after three months.

The results of our study showed that occupational therapy intervention has an impact on the environment. The directors of the shelters were informed about the study at the beginning, during the training and at the end of the intervention. Suggestions were made for multidisciplinary training programs and collaborations aimed at empowering

women. Physical environment provisions, such as job search boards and computer labs, were suggested to meet women's needs. Efforts were also made to increase participants' awareness of social and institutional networks and to support them through environmental interventions. In addition to occupational therapy efforts to directly impact the environment, it is important to empower people to shape their expectations of the environment according to their needs, help them access resources, and develop self-advocacy skills. Given the improved communication and interaction skills, it was hypothesized that these skills would be effective in making demands on the environment.

In our study, it was found that occupational therapy intervention did not affect the value of activities, or motor skills. The value part of the OSA, which together with competence forms one of the two subgroups, is useful for setting intervention priorities (Baron et al., 2006). MOHO and empowerment theories aim to select and participate in activities that people find meaningful and important. Therefore, the aim of our study is not to directly influence the importance individuals place on activities, but to increase their competence in the activities they find important. Another point concerns motor skills. No effects on motor skills were found. In our study, participants reported a wide range of health problems causing pain. Pain management, referral to a physician, and individualized ergonomic precautions were taken for these problems. In addition, our intervention may not have been sufficient to support access to health care. In addition, more comprehensive and multidisciplinary pain management programs may be needed for this population.

According to MOHO, skills, when maintained through sufficient repetition and in a satisfactory manner, can become habits, that is, routines and roles (Cole and Tufano, 2008). Occupational therapy interventions should ensure that these skills are acquired and maintained. In contrast to the post-intervention evaluations, this goal is supported in the follow-up evaluation by the development of occupational patterns, i.e., habit. Based on this information, it can be said that the learned skills have begun to transform into routines and roles.

There are some limitations of our study that should be pointed out. We were unable to form a control group because of the practical difficulties of recruiting all women who met the inclusion criteria for an intervention and the limited time we were able to spend at the women's shelter. It would be useful to

conduct further studies with a randomized controlled design. We also limited the intervention to 4 weeks because the length of stay in the shelter was variable. In other intervention studies, this time period might need to be regulated according to the client-centered approach. Despite these limitations, we believe that the benefits of the MOHO-based occupational therapy intervention for women exposed to violence and the sustained impact after the third month are valuable. It is also hypothesized that the occupational therapy intervention, based on MOHO and getting the person to take responsibility for their change, could contribute positively to the empowerment process.

Ethical Approval

The study was approved by the "Hacettepe University Clinical Research Ethics Committee" (2017 / 08-33; KA -17075). The study was conducted in accordance with the Declaration of Helsinki and written informed consent was obtained from the participants.

Authors' Contribution

Data collection and intervention process was carried out by the first author. The conception, design, control, analysis and interpretation, literature review, manuscript writing and critical appraisal processes were carried out jointly by both authors.

Conflicts of Interest Statement

The authors have no conflicts of interest to declare.

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