



Systematic Review

The Effectiveness of Occupational Therapy on Patients with Schizophrenia or Another Mental Illness: A Systematic Review

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ABSTRACT

Introduction: A growing body of literature has shed light on occupational therapy (OT) interventions and outcomes in relation to mental illness. The purpose of this article is to provide an overview of the OT interventions used with patients with schizophrenia or mental illness and their documented outcomes in relation to functional level, well-being and quality of life..

Methods: The databases searched were Scopus, Proquest, Sage, and Pubmed and the time of publication was in the last ten years. This was limited by the journal source type. The search terms, truncated when relevant, were "schizophrenia," "mental illness," "work training," "occupational therapy" and "vocational therapy". Thirteen peer-reviewed intervention studies targeting adults with mental illness or schizophrenia were reviewed and analyzed.

Results: There are 6 categories related to the occupational interventions that emerged: skill training, cognitive-based occupational treatment, psychosocial-based occupational therapy, cognitive behavior therapy-based occupational therapy, creative occupational therapy, and peer group support-based occupational intervention.

Conclusion: Most of the previous literature states that there were significant effects from the occupational therapies on the level of functioning, well-being or quality of life of the patients with schizophrenia or mental illness.

ARTICLE HISTORY

Received: Feb 27, 2020

Accepted: April 1, 2020

KEYWORDS

schizophrenia; mental illness; occupational therapy; level of functioning

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Cite this as: Anggraini, Y., Wahyudi, A., Larasati, D. I., & Yusuf, A. (2020). The Effectiveness of Occupational Therapy on Patients with Schizophrenia or Another Mental Illness: A Systematic Review *Jurnal Ners, Special Issues*, 538-547. doi: [http://dx.doi.org/10.20473/jn.v15i2\(si\).20523](http://dx.doi.org/10.20473/jn.v15i2(si).20523)

INTRODUCTION

Schizophrenia has long been considered to be a chronic and debilitating illness with an almost inevitably deteriorating course. Despite the demonstrated efficacy of antipsychotic medication in the short term, previous treatment goals were frequently modest with clinicians settling for outcomes such as 'the control of behavior' or 'stability'(Emsley, Chiliza, Asmal, & Lehloeny, 2011). It has been emphasized that it is necessary to consider changes in the functionality of patients in the application of experimental treatments and their responses to said treatments. For this reason, importance has recently been given to therapeutic approaches and applications used to increase the

functionality of patients during their treatment. In clinics providing treatment services to both inpatients and outpatients, occupational therapies with this aim and similar ways of increasing functionality are increasingly presented as an integral part of treatment.

Cochrane's review addressing occupational therapy (OT) interventions pointed out the paucity of evidence in the field (Steultjens, Dekker, Bouter, Leemrijse, & van den Ende, 2005). Since then, a few systematic reviews have been explicitly focused on OT in the field of mental health. Arbesman and Logsdon (2011) reviewed the OT interventions aimed at facilitating education and work. Seven categories of intervention emerged: employment/education, psychoeducation, creative occupations/activity, time

use/occupational balance, skills/habit development, group/family approaches and animal-assisted therapy. This was based on a review of 50 peer-reviewed intervention studies targeting adults with mental illness (Kirsh et al., 2019). D'Amico and colleagues (2018) updated the evidence on this topic using a systematic review presenting evidence on the interventions and how they improve and maintain their performance and participation in ADLs, IADLs, social participation, leisure, rest and sleep for people with SMI. Five themes in these areas were identified: occupation-based interventions, psychoeducation, skills training, cognitive-based interventions, and technology-supported interventions (Spencer et al., 2017).

According to the explanation above, there were no reviews focused on the theme referring to the outcomes of the occupational interventions on mental illness, especially regarding the level of functioning, well-being and quality of life. This is why the writer conducted this review in order to provide alternative references about what a suitable occupational intervention is for schizophrenia and other mental illness.

MATERIALS AND METHODS

Strategy for searching

The databases searched included Scopus, Proquest, Sage and Pubmed. The publication period was over the last 10 years limited by journal source type. The

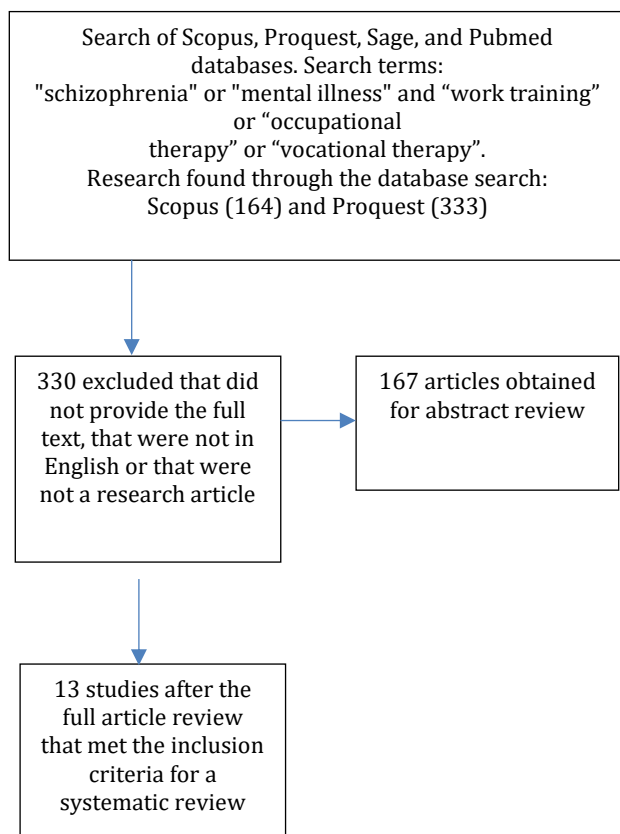


Figure 1 – Article selection process

search terms, truncated when relevant, were "schizophrenia" or "mental illness" and "work training" or "occupational therapy" or "vocational therapy."

Study selection

Following the selection, 497 articles were obtained that met the inclusion criteria, that used the keywords above, journal source type, article type and the review specifications in which the subjects were medicine, psychology, nursing, and healthcare articles published in 2010-2020 as seen on (Figure 1). The excluded articles that didn't provide a full text totaled 164. After undergoing an abstract review, there were only 13 articles found to be suitable according to the variables needed. The independent variable was work therapy, occupational therapy, vocational therapy or a rehabilitation program. The dependent variables chosen were the level of functioning, well-being and the quality of life of the patients with schizophrenia or another mental illness.

RESULTS

General statistics of the studies

Referring to the 13 studies synthesized, most were conducted in the last 5 years and randomized control trials were the most common type of study conducted.

General findings of the studies

The 13 studies about occupational interventions were divided by writer into 6 categories, namely skills training, cognitive therapy-based occupational treatment, cognitive behavior therapy-based occupational therapy, psychosocial occupational therapy, creative-based therapy and a peer group support-based occupational intervention.

The skills training-based occupational therapies were examined in 3 articles in which the interventions were Balancing Everyday Life (BEL), a grocery shopping program and an occupational goal intervention. The BEL program has a strong focus on

Table 1. General characteristics of the selected studies (n=13)

Category	n	%
Year of publishing		
2010	1	7.69%
2013	1	7.69%
2016	6	46.15%
2017	2	15.38%
2018	1	7.69%
2019	2	15.38%
Type of study		
RCT	7	53.85%
Quasi experiment	4	30.77%
Cross-sectional	1	7.69%
Longitudinal	1	7.69%

accomplishing an activity balance for the participants. This is defined as having a satisfying amount of and a variation between activities. This is in addition to other aspects such as activity engagement and valued and satisfying activities. The BEL group improved more than the CAU group from the baseline after looking at the primary outcomes in terms of activity engagement, activity level, and activity balancing. The BEL group also improved more in terms of symptom severity and the level of functioning from baseline (Eklund, Tjörnstrand, Sandlund, & Argentzell, 2017).

A program based on the grocery-shopping process components (Kim, Park, Kim, & Park, 2019) aimed to improve the shopping skills of the patients with chronic schizophrenia living in communities. This intervention is a form of skill training occupational therapy. This program was in addition to the conventional rehabilitation programs which consisted of physical exercise, social skill training and social-adaptation training. The grocery shopping skill program was implemented in grocery shops in the local community for 50 minutes a session. After 8 sessions, the evaluation showed that the grocery shopping skill program in a real life situation could be useful for improving executive function and the instrumental activity related to the daily living of patients with schizophrenia.

The OGI method has been shown to be reliable and effective for patients with treatment-resistant schizophrenia. In addition, the method appeared to improve their social and functional aspects. The study protocol of adjuvant occupational therapy was used to evaluate the effectiveness of an occupational intervention for depressed employees measured according to their level of work-participation and work-functioning including quality of life and neurocognitive functioning (Vizzotto et al., 2016).

Psychosocial-based occupational therapies were included in 3 articles. Two of them studied individualized occupational therapy and one used OT and psychosocial treatment. The IOT program (Shimada, Nishi, Yoshida, Tanaka, & Kobayashi, 2016) was aimed at facilitating a level of proactive participation in terms of the treatment and improving the patient's functional outcomes. This consisted of a combination of effective psychosocial treatment programs: motivational interviewing, self-monitoring, individualized visits, handicraft activities, individualized psychoeducation and discharge planning. The intervention was performed on hospitalized patients. The findings show that preliminary support for the feasibility of the IOT and the efficacy of providing IOT in addition to GOT improves the cognitive functioning and symptoms of patients with schizophrenia or schizoaffective disorder. Patients who participated in the GOT+ IOT demonstrated significant improvements in several areas of cognitive functioning, intrinsic motivation and social functioning. There were no statistically significant differences in the symptoms. In a multi-center randomized control trial, the patients who participated in the GOT+ IOT demonstrated

significant improvements in several areas of cognitive functioning, intrinsic motivation, and social functioning. There were no statistically significant differences in their symptoms (Shimada, Ohori, Inagaki, & Shimooka, 2018).

Occupational therapy in the form of a psychosocial intervention was conducted with mental illness groups. The results demonstrated significantly positive repercussions, specifically in the treatment of non-psychotic patients. Both groups benefit from occupational activities as shown by the improvements in all of the psychiatric inpatients' personal and social performance scores in comparison with the scores of the control group. Psychosocial approaches can thus be said to enhance the personal and social performance in the patient group, thereby leading to additional clinical benefits.

Adjuvant occupational therapy conducted with the employees with depression was done in the form of cognitive-based occupational therapy. The study protocol showed that no results were reported in the study protocol. The results would have been used to evaluate the effectiveness of an occupational intervention among depressed employees measured by the level of work-participation and work-functioning including quality of life and neurocognitive functioning (Hees, Koeter, Vries, Ooteman, & Schene, 2010).

The articles about IVIP describe a cognitive behavior therapy-based occupational therapy. IVIP (Mervis et al., 2016) was more efficacious than SG when it came to improving work performance during the 4 month work therapy placements. This is associated with higher rates of participation at the time of the follow-up. IVIP was also associated with a reduction in defeatist beliefs and an improvement in motivation for community employment. The sample as a whole, for their pre-post treatment changes in defeatist beliefs, correlated with pre-post treatment changes concerning social and occupational functioning.

The creative activity-based OT shown in the articles (Gunnarsson & Bj, 2013) (Gunnarsson, Wagman, Hedin, & Håkansson, 2018) revealed that after 3 years in a follow-up study, the participants' self-rating regarding their sense of coherence, occupational performance and satisfaction with their occupational performance showed significant positive changes after they had taken part in the TTM intervention. The participants' ratings regarding psychological symptoms, self-mastery, activity level and the extent of satisfaction from their performed occupation were found to be stable even though there were no statistically significant positive changes.

The peer OT can be seen on the article on the occupational therapy workshop, community support centers, job buddies training program and the OTW and vocational development center (VDC) (Bro, Saw, Row, & Ja, 2017) (Kei et al., 2016) (Cic, Aleksandra, & Piotr, 2019). Occupational therapy is performed based on expanded environmental support models (Bro et al., 2017). These include the activities within

day structure modeling, social network compensation, social ability training, individual and group psychological support and help in the course of engaging with employment that were observed in the occupational therapy workshops (OTW) and community-based support center (CSC). The OTW users had more numerous social networks that were statistically significant in the following categories: "cohabitants," "service acquaintances" and "other acquaintances." The level of obtained support in general shows there to be no differences between the groups on a statistically significant basis. The OTW users obtained more support functions from outside the service. There were no significant differences between the scales of interpersonal behaviors/relations, pro-social activities and employment/occupation. In both scales, the OTW users obtained higher scores than the CSC users. There were no significant differences between the means for the scales of social engagement, recreation, independent performance and independent competence.

DISCUSSION

There are 6 categories presented concerning occupational therapy that involves positive outcomes for the functional level, well-being and quality of life of the patients with schizophrenia or another mental illness. These categories include skills training, cognitive therapy-based occupational treatment, cognitive behavior therapy-based occupational therapy, psychosocial occupational therapy, creative-based OT and peer group support-based occupational intervention. The results described in the articles show that occupational therapy in the experimental and cross-sectional designs have improved the patient's level of functioning, well-being and quality of life.

There is also some support to suggest that other OT interventions in the form of psychosocial approaches may provide more significant benefits than traditional OT. Research into creative occupations and activity-based interventions shows good results. OT interventions that facilitate skills, habits, and motivation can significantly impact on the patient's level of functioning.

CONCLUSION

This review of occupational therapy is based on 13 original articles published in variety of journals in the areas of medicine, psychology, nursing, and healthcare. Most of the articles were published in the last 5 years, leading to the conclusion that there is an increasing momentum to evaluate and report on occupational therapy concerning the level of functioning, well-being and quality of life. Contrarily, very limited occupational intervention articles have been found in the last 10 years. Only a few matched the criteria, showing that the research into occupational therapy has decreased in quantity. Six

categories of occupational therapy within the 13 articles reviewed have a positive effect on the level of patient functioning, well-being and quality of life.

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APPENDIX

Table 2. Summary of the studies

Author	Design	Sample	Variables	Results
(Eklund et al., 2017)	RCT	133 participants in the BEL group and 93 in the CAU group with a broad spectrum of disorders such as psychoses, mood disorders and neuropsychiatric disorders.	Independent variable: 16 weeks BEL (Balancing Everyday Life). Dependent variables: Subjectively evaluated everyday activities in terms of engagement, satisfaction, balance, and activity level. This is in addition to well-being and functioning.	The BEL group improved more than the CAU group from the baseline in terms of the primary outcomes of activity engagement, activity level and activity balancing. The BEL group also improved more in relation to symptom severity and the level of functioning from the baseline.
(Kim et al., 2019)	Non-equivalent control group with a pretest-posttest design	20 participants with schizophrenia	Independent variable: Grocery shopping skill program. Dependent variable: Executive function and the instrumental activities of daily living.	The grocery shopping skill program in a real life situation could be useful at improving executive function and the instrumental activity of daily living among patients with schizophrenia.
(Bro et al., 2017)	Cross-sectional	119 participants with schizophrenia at a community based support centre (CSC) and 79 participants with schizophrenia engaged in an occupational therapy workshop (OTW).	Independent variables: Community-based support centre and Occupational Therapy Workshop. Dependent variables: Network and social support, social functioning.	OTW users have statistically significantly social networks in the following categories: "cohabitants," "service acquaintances" and "other acquaintances." The level of obtained support in general shows there to be no differences between the groups on a statistically significant basis. The OTW users obtained more support functions from outside the service. There were no significant differences between the scales of interpersonal behaviors/relations, pro social activities, and employment/occupation. In both scales, the OTW users obtained higher scores than the CSC users. There were no significant differences between the means of the scales: social engagement, recreation, independent

Author	Design	Sample	Variables	Results
				performance and independent competence.
(Shimada et al., 2016)	Quasi-experimental control trial	30 participants with schizophrenia or schizoaffective disorder in Group Occupational Therapy (GOT) and Individualized Occupational Therapy (IOT). 21 participants engaging in GOT only.	Independent variables: GOT + IOT. Dependent variables: Neurocognition, symptoms and social functioning.	The present study provides preliminary support for the feasibility of the IOT and the efficacy of providing IOT in addition to GOT to improve the cognitive functioning and symptoms of patients with schizophrenia or schizoaffective disorder.
(Vizzotto et al., 2016)	Pilot randomized control trial	16 patients with schizophrenia doing the Occupational Goal Intervention (OGI). 14 patients with schizophrenia engaging in craft activities.	Independent variable: OGI. Dependent variable: Executive functioning.	The OGI method has been shown to be reliable and effective for patients with treatment-resistant schizophrenia. In addition, the method appeared to improve their social and functional aspects.
(Calmak, Sut, Ozturk, Tamam, & Bal 2016)	Quasi-experimental	48 patients with mental illness in the study group. 43 patients with mental illness in the control group.	Independent variables: Occupational therapy and psychosocial intervention. Dependent variable: Interpersonal functioning and social performance levels.	The results demonstrated significantly positive repercussions, specifically in relation to the treatment of non-psychotic patients. Both groups benefited from occupational activities as shown by the improvements in all of the psychiatric inpatients' Personal and Social Performance scores in comparison with the scores of the control groups. The psychosocial approaches enhanced the personal and social performance in the patient group, leading to additional clinical benefits.
(Mervis et al., 2016)	RCT	29 participants with schizophrenia and schizoaffective disorder (IVIP). 35 participants with schizophrenia and schizoaffective disorder in a support group (SG).	Independent variable: Indianapolis Vocational Intervention Program (IVIP). Dependent variables: - Primary variable: Defeatist beliefs, motivation and	IVIP was more efficacious than SG at improving work performance during the 4-month work therapy placements. It was associated with higher rates of participation at the time of the follow-up. The IVIP was also associated with a reduction in defeatist beliefs and an improvement in the motivation for community employment. The sample as a whole, in terms of their pre-post treatment changes in relation to defeatist beliefs,

Author	Design	Sample	Variables	Results
			supported employment. Secondary variables: symptoms of schizophrenia, quality of their social and occupational functioning, value of the work, productivity and work-related behavior.	correlated with pre-post treatment changes in social and occupational functioning.
(Shimada et al., 2018)	RCT	66 patients with schizophrenia in the GOT and IOT group. 63 patients in the GOT alone group aged 22-65 years.	Independent variable: Individualized occupational therapy (IOT). Dependent variable: Cognitive functioning, social functioning, intrinsic motivation and symptoms.	The patients who participated in the GOT+ IOT demonstrated significant improvements in several areas of cognitive functioning, intrinsic motivation and social functioning. There were no statistically significant differences in the symptoms.
(Kei et al., 2016)	Quasi-experiment	6 participants with mental illness	Independent variable: Job buddies training program. Dependent variable: Mental health recovery from a customer perspective, perceived stigma and self stigma, occupational competence and problem-solving skills.	There was an increase in the perceived level of their own recovery progress (overcoming stuckness, self-empowerment, learning and self-redefinition, basic functioning, overall well-being, new potentials, advocacy/enrichment, and spirituality), more confidence in their mastery over their job and decreased self-stigma.
(Hees et al., 2010)	RCT Study Protocol	117 participants who were employees with depression	Independent variable: Care as usual with the addition of occupational therapy. Dependent variable: The primary outcome was work participation and the time until	No results were reported in this study protocol. This was used to evaluate the effectiveness of the occupational intervention on depressed employees which was measured by the level of work-participation and work-functioning including quality of life, and neurocognitive functioning.

Author	Design	Sample	Variables	Results
			work resumption. The secondary outcomes were work functioning, symptomatology, health-related quality of life, and neurocognitive functioning	
(Gunnarsson & Bj, 2013)	Longitudinal quantitative design	35 clients with affective syndromes, anxiety/obsession syndromes, eating disorders or personality disorders	Independent variables: Tree theme method. Dependent variables: Perceived well-being, perceived everyday occupation.	After 3 years follow-up, the study showed that the participants' self-rating regarding their sense of coherence, occupational performance and satisfaction with their occupational performance showed significant positive changes 3 years after they had taken part in the TTM intervention. The participants' ratings regarding psychological symptoms, self mastery, activity level and the extent of satisfaction from their performed occupations were found to be stable, even though there were no statistically significant positive changes.
(Gunnarsson et al., 2018)	RCT	118 people with depression and/or anxiety	Independent variable; TTM—five sessions with painting OT as usual. Follow-ups at three and 12 months. Dependent variables; Primary and Secondary Health-related aspects involved a sense of coherence, the experience of control, quality of life, therapeutic alliance and patient satisfaction.	No significant differences between the groups for the primary outcomes of activities in everyday life and psychological symptoms were identified in the follow-up. Both groups reported significantly higher ratings for all outcomes, except for the satisfaction with activities in everyday life. This did not show significant changes in the TTM intervention group. For the secondary outcomes, i.e. various health-related and intervention-related aspects, no differences between the groups were found. However, the analysis showed positive significant outcomes in both groups except for the experience of control.
(Cic et al., 2019)	Cross-sectional	57 participants with schizophrenia	Independent variable: Vocational rehabilitation at an occupational therapy	Accepting and retaining work in a Vocational Development Center by a schizophrenia sufferer translates into better outcomes in the significant domains related to quality of life: family relationships,

Author	Design	Sample	Variables	Results
			workshop (OTW) and a vocational development center (VDC). Dependent variables: Quality of life, general functioning, social and vocational functioning.	overall health and sense of self-worth
