

MEDICAL SCIENCES

THE EFFECTIVENESS OF THE WIM HOF METHOD ON QUALITY OF LIFE PARAMETERS AND SATURATION IN PATIENTS WITH ASTHMA

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Abstract

The purpose of the research is to evaluate the effectiveness of the Wim Hof method on Quality of Life parameters and Saturation in patients with asthma. It used the SF-36 questionnaire and pulse oximetric method before and 2 months after the application of the Win Hof breathing method. The results showed, that Wim Hof breathing method improved some parameters of QOL and the SpO₂ level. We conclude, that the use of Win Hof breathing method is one of the effective breathing techniques, that increase the level of oxygenation and Quality of Life in patients with asthma.

Keywords: Asthma, Win Hof method, Quality of Life, saturation

Introduction. Asthma affected an estimated 262 million people in 2019 (1), caused 455,000 deaths (2) and affects Quality of Life (QOL) through physical, emotional, social and occupational impacts (3). Although asthma cannot be cured, exacerbations can be prevented by adequate patient counselling and proper management (4).

Breathing exercises have been widely used worldwide as a non-pharmacological therapy to treat people with asthma (5). Focused breath training can improve the strength and endurance of respiratory muscles, thereby improving breathing phenotype (6). The Wim Hof method (WHM) is a multidisciplinary approach to physical and mental well-being combining cold exposure, breathing exercises, and meditation (7). Breathing exercises consist of deep breaths and subsequent breath holds that are performed after exhaling. Each breath is performed using a yoga breath wave that starts in the abdomen and continues into the chest (8).

QOL is an important endpoint in medical and health research, and QOL research involves a variety of

patient groups and different research designs (9) and this underlines the importance of studying the parameters of QOL as a tool for evaluating the effectiveness of the use of respiratory techniques in patients with asthma.

This study aimed to evaluate the effectiveness of the Wim Hof method on Quality of Life parameters and Saturation in patients with asthma.

Materials and methods. 42 participants with a diagnosis of asthma (12 men and 30 women) were included in the study. All participants completed the SF-36 questionnaire before and 2 months after the application of the Win Hof breathing method. SpO₂ in the blood was evaluated by the pulse oximetric method (measurements were carried out for three consecutive days, 4 times a day) before and 2 months after the application of the breathing method.

Results. The descriptive statistics of the QOL parameters of the study participants before and after the Win Hof method are presented in Table 1.

Table 1.

Descriptive Statistics of the Quality of Life parameters before and after Win Hof method (M±SD)

Quality of Life parameters		Minimum	Maximum	Mean	Std. Deviation
Physical functioning (PF)	Before	15	100	77,74	17,745
	After	35	100	82,52	15,189
Physical role functioning (RP)	Before	0	100	51,19	25,870
	After	10	100	62,07	24,935
Emotional role functioning (RE)	Before	0	100	55,95	29,364
	After	0	100	57,10	28,479
Vitality (VT)	Before	35	95	63,93	11,663
	After	40	100	68,81	11,884
Mental health (MH)	Before	32	84	53,71	10,194
	After	40	90	58,19	10,563
Social functioning (SF)	Before	12	100	77,08	16,546
	After	20	98	82,37	16,997
Bodily pain (BP)	Before	25	100	79,70	19,795
	After	25	95	73,87	18,306
General health (GH)	Before	20	70	48,45	9,337
	After	45	80	63,33	9,918

Comparative assessment of QOL parametrs according are presented in Table 2.

It was determined that after applying the Win Hof method, the following parameters of quality of life improved significantly: physical activity (p=0.000), role limitation due to physical health (p=0.006), role

limitation due to emotional problems (p=0.009), vitality (p=0.000) mental health (p=0.000), pain intensity (p=0.000) and general health (p=0.000). The change between indicators of social functioning (p=0.000) was not statistically significant (p=0.22).

Table 2.

Comparative assessment of Quality of Life parameters before and after the Win Hof method (according to the Student t-test)

Paired Samples Test							
Quality of life parameters	Paired Differences					T	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
				Lower	Upper		
Physical functioning (PF)	4,786	4,470	,690	6,179	3,393	6,939	,000
Physical role functioning (RP)	10,881	9,358	1,444	13,797	7,965	7,535	,000
Emotional role functioning (RE)	1,152	2,702	,417	1,994	,311	2,764	,009
Vitality (VT)	4,881	4,056	,626	6,145	3,617	7,799	,000
Mental health (MH)	4,476	3,240	,500	5,486	3,466	8,953	,000
Social functioning (SF)	26,714	139,046	21,455	70,044	16,615	1,245	,220
Bodily pain (BP)	5,833	7,919	1,222	3,366	8,301	4,774	,000
General health (GH)	14,881	10,904	1,682	18,279	11,483	8,845	,000

The results of blood oxygen saturation assessment before and after the fitness rehabilitation program are presented in Figure 1.



Figure 1.

Blood oxygen saturation assessment before and after the fitness rehabilitation program are presented in

A comparative assessment of the SPO2 index before and after the Wien Hof method is presented in Table 3.

Table 3.

Comparative assessment of the SPO2 index before and after the Wien Hof method (Student's t-test)

Paired Samples Test							
	Paired Differences					T	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference			
				Lower	Upper		
SpO2 before - after	,952	2,284	,352	1,664	,241	2,702	,010

According to the study, blood oxygen saturation significantly improved after using the method ($p=0.01$).

Some studies determined that deep breathing and breathing exercises may have some positive effects on quality of life, hyperventilation symptoms, lung function and improve the saturation (SpO2) (5,10,11). Karam et al., showed, that a simple program of breathing exercises was found to be effective and could be completed in less than 10 minutes per day (12).

The results of our study also showed that Wim Hof breathing method improved some parameters of QOL and the SpO2 level.

Conclusion. We conclude, that the use of Win Hof breathing method is one of the effective breathing techniques, that increase the level of oxygenation and quality of life in patients with asthma.

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