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VOLUME 24

ISSUE 6

VERSION 1.0



GLOBAL JOURNAL OF HUMAN-SOCIAL SCIENCE: H  
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VOLUME 24 ISSUE 6 (VER. 1.0)

OPEN ASSOCIATION OF RESEARCH SOCIETY

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GLOBAL JOURNAL OF HUMAN-SOCIAL SCIENCE: H  
INTERDISCIPLINARY  
Volume 24 Issue 6 Version 1.0 Year 2024  
Type: Double Blind Peer Reviewed International Research Journal  
Publisher: Global Journals  
Online ISSN: 2249-460X & Print ISSN: 0975-587X

## Physical Activity Level and Time of Participation in a Water Aerobics Project for the Elderly: Analysis of the Association with Quality of life, Musculoskeletal and Osteoarticular Disorders, Chronic Pain and Body Mass Index

By Anna Regina Grings Barcelos, Daiane Bolzan Berlese, Marcus Levi Lopes Barbosa & Geraldine Alves Dos Santos

*Universidade Feevale*

**Abstract-** The objective was to analyze the association between the physical activity level (PAL) and time of participation in the practice of water aerobics with the variables successful aging (SA), quality of life (QOL), musculoskeletal and osteoarticular disorders (MOD), chronic pain (CP) and body mass index (BMI). The method has a quantitative, descriptive and cross-sectional design. The non-probabilistic sample, for convenience, comprised 101 elderly people over 60 years of age, of both genders, who regularly participate in water aerobics activities in the city of Dois Irmãos, in the state of Rio Grande do Sul. The following instruments were used: Multidimensional Pain Assessment Scale, EUROHIS-QOL, IPAQ, SOC and Body Mass Index. Descriptive analyses of frequency, comparison, correlation and multiple linear regression were used. The results showed that the irregularly active group has adequate perception of QOL and longer participation in water aerobics activities associated with lower intensity of pain perception. Likewise, better QOL and control attitudes are associated with lower prevalence of MOD.

**Keywords:** *successful aging; osteoarticular and musculoskeletal disorders; chronic pain; quality of life; BMI.*

**GJHSS-H Classification:** *LCC: RA777*



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# Physical Activity Level and Time of Participation in a Water Aerobics Project for the Elderly: Analysis of the Association with Quality of life, Musculoskeletal and Osteoarticular Disorders, Chronic Pain and Body Mass Index

Anna Regina Grings Barcelos <sup>α</sup>, Daiane Bolzan Berlese <sup>ο</sup>, Marcus Levi Lopes Barbosa <sup>ρ</sup>  
& Geraldine Alves Dos Santos <sup>ω</sup>

**Abstract-** The objective was to analyze the association between the physical activity level (PAL) and time of participation in the practice of water aerobics with the variables successful aging (SA), quality of life (QOL), musculoskeletal and osteoarticular disorders (MOD), chronic pain (CP) and body mass index (BMI). The method has a quantitative, descriptive and cross-sectional design. The non-probabilistic sample, for convenience, comprised 101 elderly people over 60 years of age, of both genders, who regularly participate in water aerobics activities in the city of Dois Irmãos, in the state of Rio Grande do Sul. The following instruments were used: Multidimensional Pain Assessment Scale, EUROHIS-QOL, IPAQ, SOC and Body Mass Index. Descriptive analyses of frequency, comparison, correlation and multiple linear regression were used. The results showed that the irregularly active group has adequate perception of QOL and longer participation in water aerobics activities associated with lower intensity of pain perception. Likewise, better QOL and control attitudes are associated with lower prevalence of MOD. The longer time of participation in the project is associated with disability, evidencing the group's weakness in the sense of carrying out more intense activities. However, they are physically active and in sufficiently good health to practice water aerobics, considering their skills and limitations. The active group reveals an association of the PAL with SA and medical healing attitudes, solicitude, emotion and control. These characteristics prove the relation of the time of participation in the pain condition scope, thus revealing the hopelessness in the medical healing and, conversely, express self-sufficiency in the ability to deal with limitations and discomfort of the conditions resulting from a chronic condition. Given this scenario, the sense of participation in physical activities has been gaining strength as one of the principles that aim to promote the improvement of QOL and physical functionality of the elderly population.

**Keywords:** *successful aging; osteoarticular and musculoskeletal disorders; chronic pain; quality of life; BMI.*

## I. INTRODUCTION

One of the greatest cultural achievements of a people in its humanization process is the aging of its population, reflecting an improvement in living conditions. According to United Nations Population Fund projections, one in 9 people in the world is 60 years of age or older, and a 1 to 5 growth is

estimated around 2050. In 2050, for the first time, there will be more elderly people than children under 15 years of age. In 2012, 810 million people were aged 60 or over, making up 11.5% of the global population. This number is projected to reach 1 billion in less than ten years and more than to double in 2050, reaching 2 billion people or 22% of the global population (IBGE, 2016).

Within the scope of the Brazilian population, rapid and profound changes have reflected in economic growth, in the labor market and in the profile of demands for public policies. Among the main changes, Camarano (2014) highlights the sharp fall in fertility and mortality at all ages and population aging, as well as the emergence of new forms of family arrangements. Considering that aging is a natural, universal, irreversible phenomenon and does not occur simultaneously and equally among human beings, it is essential to ratify the inclusion of physical activities in the daily lives of the elderly in the context of improving the quality of life (Borges et al., 2017).

In view of the demographic growth and the changes in the age pyramid, associated with the heterogeneity of the aging process, there is a recurring need to envision preventive and health care actions, to cover the maintenance of the organic function and the social well-being of the elderly population. Likewise, quality of life is important, as there is a new sensitivity to old age, derived from the aging of the population, the presence of a greater number of active and healthy elderly people and the constant dissemination of information about the importance of a healthy lifestyle and the search for medical and social resources that improve and prolong life (Neri, 2011). In view of this, several organizations emphasize the benefits of physical activity for the health and well-being of individuals of all ages. Moreover, it has been proven that the use of quantitative assessments is useful to estimate levels of physical activity based on self-reported data on the type, frequency and intensity of exercises (Taylor, 2015).

With regard to active aging, the World Health Organization (WHO) recommends that elderly people aged 65 and over engage in at least 150 minutes per week of moderate intensity activities or at least 75

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minutes per week of vigorous intensity or an equivalent combination moderate and vigorous activity. Aerobic activity should be performed in sessions of at least 10 minutes to obtain additional health benefits, in addition to daily routine activities. Elderly people with little mobility should perform physical activities to improve balance and avoid falls on three or more days a week. When they are unable to practice the amounts of physical activity due to health conditions, they should be as physically active as their skills and conditions allow (World Health Organization, 2010).

Given this perspective, the practice of water aerobics has been growing among the elderly population, as well as scientific investigations that seek to test and prove the benefits associated with its execution. In this context, it is important to highlight the characteristics related to the physical properties of the water environment. The practice of water-based exercises produces physiological and biomechanical responses different from those of the terrestrial environment, since individuals immersed in the liquid environment are subjected to a set of forces that act on them (Kruel et al., 2013; Baun, 2010).

Considering the above, the objective of this study was to analyze the association between the physical activity level and time of participation in the practice of water aerobics with successful aging, quality of life, prevalence of musculoskeletal and osteoarticular disorders, chronic pain and body mass index in elderly people participating in a water aerobics program in the city of Dois Irmãos, in Rio Grande do Sul.

## II. METHOD

The present study has a quantitative, descriptive and cross-sectional design. The population of this study was composed of elderly people who participate in the water aerobics project offered by the Municipal Administration of Dois Irmãos, through the Department of Health, Social Assistance and Environment. A total of 230 elderly residents of the city aged over 60 years participate in the project.

The sample of this study was non-probabilistic, for convenience, and comprises 101 participants, of both genders, aged over 60 years, consisting of elderly people who regularly participate in water aerobics activities. The inclusion criteria established were to be aged over 60 years, not to be institutionalized or hospitalized, to have mental and health conditions to have independence and autonomy to participate in the study and sign an informed consent form. The exclusion criteria determined by the research were to present dementia, frailty syndrome, to be hospitalized or institutionalized.

The data collection instruments used in this study refer to sociodemographic variables and the presence of osteoarticular and musculoskeletal

disorders, pain assessment (Multidimensional Pain Assessment Scale and brief IAD), quality of life (EUROHIS-QOL), successful aging (Selection, optimization and compensation survey, SOC), body weight status (Body Mass Index - BMI) and physical activity level (IPAQ - adapted long version). The Ethics Committee from Feevale University approved the project. Participants signed an informed consent form in accordance with resolutions 466/2012 and 510/2016 of the National Health Council of the Ministry of Health that deals with research involving human beings.

## III. RESULTS

The distribution of the 101 elderly people participating in the activity, in relation to the physical activity level, is 66.3% (n=67) active and 33.7% (n=34) irregularly active. In the comparison between the classification of the physical activity level evaluated by the IPAQ test (subdivided between irregularly active and active) and the variable time of participation in the water aerobics project (subdivided in the period from beginner to the maximum time of 4 years and in the period of 5 to 12 years), no significant difference was found. Although there was no significant difference between the groups assessed by the Chi Square test, the results showed that the largest group of participants focused on the active classification and had participated in the project for more than 5 years.

Table 1 shows the bivariate correlations performed by the Spearman test. The physical activity level variable, assessed by the IPAQ test, shows that by increasing the level of physical activity, the elderly people in our study show an increase in quality of life and decrease in the body mass index assessed by BMI. As to the time of participation in the project, it is identified that the more years the elderly are regularly participating in this project, the lower is the use of strategies to promote successful aging, especially the elective selection strategy, as if there were a certain accommodation over the years. The solicitation strategy to face chronic pain also decreases.

**Table 1:** Correlations between Successful Aging Strategies, Quality of Life, Body Mass Index and Physical Activity Level and Project Participation Time

			SOC	Elective Selection	Quality of Life	Solicitude	BMI
Spearman's Rho	Physical Activity Level	Correlation Coefficient	.008	.137	.290**	-.079	-.304**
		Sig. (2-tailed)	.934	.178	.003	.509	.002
		N	101	101	101	72	101
	Time of Participation in the Water Aerobics Project (years)	Correlation Coefficient	-.311**	-.300**	.146	-.247*	-.003
		Sig. (2-tailed)	.002	.003	.145	.036	.973
		N	101	101	101	72	101

Note: \*\* Significant Correlation  $p \leq 0.01$ ; \* Significant Correlation  $p \leq 0.05$ ; SOC = Selection, optimization and compensation survey, BMI = Body Mass Index.

Table 2 shows the correlation of the group of people who are irregularly active. In this group we can identify that both the increase in the perception of quality of life and the time of participation in water aerobics activities are associated with the decrease in the perception of chronic pain intensity. Longer participation

in the project's activities is also associated with the disability strategy. Increased perception of quality of life and control strategy and decreased chronic pain are associated with a decrease in the number of osteoarticular diseases.

**Table 2:** Correlation Analysis Using Spearman's Test in the Irregularly Active Elderly Group

Variables		Rho	p	N
Quality of Life	Chronic Pain Perception Intensity	-.412	.016	34
Time of Participation in Regular Water Aerobics Activities	Chronic Pain Perception Intensity	-.410	.016	34
Time of Participation in Regular Water Aerobics Activities	Incapacity	.394	.046	26
Osteoarticular Diseases	Quality of Life	-.347	.044	34
Osteoarticular Diseases	Chronic Pain Perception Intensity	.520	.002	34
Osteoarticular Diseases	Control	-.416	.034	26

Note: rho = Spearman's Rho; p = Significance Level.

Table 3 shows the correlation analyzes of the group of people who remain active. In this group we can see that the increase in the perception of quality of life and the decrease in osteoarticular diseases, as in the irregularly active group, reduces the perception of chronic pain intensity. By increasing the time of participation in water aerobics activities, the use of the elective selection strategy to promote successful aging decreases, but the control strategy for pain increases. The use of the emotion strategy is also associated with a decreased perception of chronic pain. The more the solicitude strategy is used, the less the optimization and the more the compensation strategies are used. Compensation is associated with decreased medical healing. The increase in the perception of quality of life is associated with a decrease in physical damage. Just

as the decrease in medication is associated with an increased optimization and decreased control.

Table 3: Correlation Analysis Using Spearman's Test in the Active Elderly Group

Variables		rho	p	N
Chronic Pain Perception Intensity	Quality of Life	-.260	.034	67
Time of Participation in Regular Water Aerobics Activities	SOC	-.356	.003	67
Time of Participation in Regular Water Aerobics Activities	Elective Selection	-.406	.001	67
Time of Participation in Regular Water Aerobics Activities	Control	.322	.029	46
Chronic Pain Perception Intensity	Emotion	-.355	.016	46
Solicitude	Optimization	-.423	.034	46
Solicitude	Compensation	.352	.017	46
Medical Cure	Compensation	-.449	.002	46
Physical Damage	Quality of Life	-.311	.036	46
Medication	Optimization	-.306	.039	46
Medication	Control	.291	.050	46
Chronic Pain Perception Intensity	Osteoarticular Diseases	.393	.001	67

Note: rho = Spearman's Rho; p = Significance Level; SOC = Selection, optimization and compensation survey.

Linear regression analysis was performed in the group with an active physical activity level (n = 67), by using the stepwise method with a significance level of  $\leq 0.05$ . Strategies for promoting successful aging (selection, optimization and compensation) was used as the dependent variable.

Table 4 shows an indirect relation (signal and intensity) between the SOC variable (dependent, explained) and the time of participation in the water

aerobics and medical healing project (independent, explanatory). In this model, a 0.347 R-squared ( $R^2$ ) was obtained. This determination coefficient is a measure of the efficiency of the regression equation. Indicates that 34.7% of the variations in successful aging strategies can be explained by variations in the time of participation in the project and medical healing in active people.

Table 4: Multiple Linear Regression of the SOC Variable in Active Elderly Individuals

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Collinearity Statistics	
	B	Standard Error	Beta			Tolerance	VIF
(Constant)	10.635	0.860		12.368	0.000		
Time of Participation in the Water Aerobics Project (years)	-0.312	0.074	-0.522	-4.182	0.000	0.976	1.025
Medical Cure	-0.947	0.322	-0.367	-2.943	0.005	0.976	1.025

Note: VIF = Variance Inflation Factor; SOC = Selection, optimization and compensation survey.

In the same group classified as active (n=67), linear regression analysis was performed by using the stepwise method, with time of regular participation in the water aerobics project set as the dependent variable. In the analysis presented in table 5, the relation between the time of participation in the water aerobics project (dependent, explained) was indirectly related to the SOC, medical healing and solicitude variables and directly related to the control variable (independent, explanatory). In this model, a 0.459 R-squared ( $R^2$ ) was obtained. This determination coefficient indicates that 45.9% of the variations in the time of participation in the water aerobics project can be explained by the variations of the other variables. In this group of active elderly people, the permanence of people in the project is partly explained by the decrease in the strategies for

successful aging, medical healing and solicitude, and increased control.

**Table 5:** Multiple Linear Regression of the Variable Time of Participation in the Water Aerobics Program (years) with Active Elderly Individuals

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Collinearity Statistics	
	B	Standard Error	Beta			Tolerance	VIF
(Constant)	11.636	3.266		3.563	.001		
SOC	-.830	.205	-.496	-4.044	.000	.879	1.138
Medical Cure	-1.646	.528	-.381	-3.121	.003	.886	1.129
Solicitude	-.882	.332	-.312	-2.653	.011	.957	1,045
Control	1.583	.672	.279	2.354	.023	.941	1.063

Note: VIF = Variance Inflation Factor; SOC = Selection, optimization and compensation survey.

In the groups classified as Active (n=67) and Irregularly Active (n=34), a linear regression analysis was performed by applying the stepwise method, with the perception of chronic pain intensity as the dependent variable, as shown in Table 6.

In this analysis, the verification of the perception of pain indirectly related to quality of life in the irregularly active group and emotion in the active group. In this model, a 0.176 R-squared (R<sup>2</sup>) of was obtained in the

irregularly active group and 0.160 in the active group. This coefficient of determination indicates that 17.6% of the variations in the perception of chronic pain intensity can be explained by variations in quality of life and emotion (16%). In the group of irregularly active elderly people, the decrease in pain perception is related to the promotion of quality of life and, in the active group, emotion stands out.

**Table 6:** Multiple Linear Regression of the Variable Chronic Pain Perception in Irregularly Active and Active Elderly Individuals

IPAQ Classification	Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Collinearity Statistics	
		B	Standard Error	Beta			Tolerance	VIF
Irregularly Active	1 (Constant)	16.263	4.123		3.944	.001		
	EUROHIS	-.296	.133	-.419	2,216	.037	1.000	1.000
Active	1 (Constant)	5.202	.575		9.052	.000		
	Emotion	.629	.218	.400	2.893	.006	1.000	1.000

Note: VIF = Variance Inflation Factor; IPAQ = Physical Activity Level.

Table 7 shows the correlation analyzes of the group of people in our sample who regularly participate in the water aerobics project for a maximum of four years. The analysis was performed by using the Spearman test with  $\alpha \leq 0.05$  significance level. In this group, the decrease in the perception of pain and the increase in the elective selection strategy are associated with an increase in the perception of quality of life. The increase in the physical activity level is also associated with the increased use of the elective selection strategy and decreased perception of chronic pain. The increase in the perception of chronic pain is also directly related to the number of osteoarticular diseases. The increase in the use of the elective selection strategy is associated with a decrease in control, just as the increase in

emotion is associated with increased solicitude and physical damage. Decreased medical healing is associated with increased successful aging strategies.

**Table 7:** Correlation Analysis in the Group of Elderly Individuals Participating Regularly in the Water Aerobics Project for a Maximum of 4 Years

Variables		Rho	p	N
Quality of Life	Chronic Pain Perception Intensity	-.361	.017	43
Quality of Life	Elective Selection	.467	.002	43
Physical Activity Level	Elective Selection	.354	.022	43
Physical Activity Level	Chronic Pain Perception Intensity	-.336	.028	43
Osteoarticular Diseases	Chronic Pain Perception Intensity	.551	.000	43
Elective Selection	Control	-.372	.043	31
Solicitude	Emotion	.420	.019	31
Medical Cure	SOC	-.537	.002	31
Medical Cure	Elective Selection	-.567	.001	31
Medical Cure	Compensation	-.464	.010	31
Physical Damage	Emotion	.367	.042	31

Note: rho = Spearman's Rho; p = Significance Level; SOC = Selection, optimization and compensation survey.

Table 8 shows the correlation analyzes of the group of people in our sample who regularly participate in the water aerobics project for at least five years. The analysis was performed by applying the Spearman test with  $\alpha \leq 0.05$  significance level. In this group, the decrease in the perception of pain is associated with an

increase in the perception of quality of life, control, and a decrease in the number of osteoarticular diseases. The increase in the physical activity level is associated with the increased use of control. Increased solicitude is associated with increased optimization, emotion and medication.

**Table 8:** Correlation Analysis in the Group of Elderly Individuals Participating Regularly in the Water Aerobics Project for 5 Years or More

Variables		rho	p	N
Chronic Pain Perception Intensity	Quality of Life	-0,295	0,022	58
Physical Activity Level	Control	0,368	0,018	41
Chronic Pain Perception Intensity	Osteoarticular Diseases	0,361	0,005	58
Solicitude	Optimization	-0,486	0,040	41
Chronic Pain Perception Intensity	Control	-0,313	0,047	41
Solicitude	Emotion	0,475	0,002	41
Solicitude	Medication	0,327	0,037	41

Note: rho = Spearman's Rho; p = Significance Level.

Table 9 shows the linear regression analysis performed by using the stepwise method, with BMI as the dependent variable. In this analysis, the BMI was indirectly related to solicitude and physical activity level in the group with less than 4 years of participation in the project. In this model, a 0.377 R-squared ( $R^2$ ) was

obtained, indicating that 37.7% of the BMI variations can be explained by the variations in solicitude and physical activity level. In the group of elderly people who participate less often, the decrease in BMI is related to the increase in solicitude and physical activity level.

**Table 9:** Multiple Linear Regression of BMI in the Group with Shorter Participation Time in the Water Aerobics Project

Time of Participation in the Water Aerobics Project	Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Collinearity Statistics	
		B	Standard Error	Beta			Tolerance	VIF
Participation of 4 Years or Less in the Water Aerobics Project	(Constant)	37.455	1.929		19.414	.000		
	Solicitude	-1.495	.478	-.483	-3.127	.004	.967	1.034
	IPAQ	-.017	.005	-.478	-3.094	.005	.967	1.034

Note: VIF = Variance Inflation Factor

Table 10 shows the linear regression analysis by using the stepwise method, in the group of active elderly people who participate in the water aerobics project for 4 years or less (n=31) with the strategies for promoting successful aging (SOC) as the dependent variable. In this analysis, SOC was indirectly related to medical healing and solicitude. In this model, a 0.606

R-squared (R<sup>2</sup>) was obtained, indicating that 60.6% of the SOC variations can be explained by variations in medical healing and solicitude. In this active group, which participates for a shorter time in the water aerobics project, SOC strategies are related to a reduction in the medical healing and solicitude strategies.

**Table 10:** Multiple Linear Regression of SOC in the Group of Active Individuals with 4 Years or Less of Participation in the Water Aerobics Project

Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Collinearity Statistics	
	B	Standard Error	Beta			Tolerance	VIF
(Constant)	13.281	1.182		11.237	.000		
Medical Cure	-1.860	.368	-.859	-5.058	.000	.805	1.243
Emotion	-.674	.233	-.492	-2.899	.010	.805	1.243

Note: VIF = Variance Inflation Factor; SOC = Selection, optimization and compensation survey.

Table 11 shows the linear regression analysis by using the stepwise method, in irregularly active (n=27) and active (n=36) groups of people with more than 5 years of participation in the water aerobics project. The dependent variable was perception of chronic pain intensity. In this analysis, chronic pain was directly checked for the variables osteoarticular

disorders in the irregularly active group and emotion in the active group. In this model, 0.383 and 0.379 R-squared (R<sup>2</sup>) were obtained, respectively. Indicating that 38.3% and 37.9% of the variations in the chronic pain intensity can be explained by the variation in the number of chronic diseases in the irregularly active group and by the emotion in the active group.

**Table 11:** Multiple Linear Regression of Chronic Pain Intensity in Irregularly Active and Active Groups with More than 5 Years of Participation in the Water Aerobics Project

Classification IPAQ	Model	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Collinearity Statistics	
		B	Standard Error	Beta			Tolerance	VIF
Irregularly Active	(Constant)	5,699	0,515		11,059	0,000		
	Osteoarticular Diseases	1,210	0,426	0,619	2,843	0,014	1,000	1,000
Active	(Constant)	4,194	0,725		5,782	0,000		
	Emotion	1,093	0,286	0,616	3,829	0,001	1,000	1,000

Note: VIF = Variance Inflation Factor; IPAQ = Physical Activity Level.

Table 12 shows the linear regression analysis by using the stepwise method, in the group of irregularly active elderly people (n=27) with more than 5 years of participation in the water aerobics project and active people (n=31) with 4 years or less, with BMI as the dependent variable. In this analysis, the BMI was indirectly related to the medication and optimization variables in the irregularly active group (R<sup>2</sup>=0.766) and solicitude (R<sup>2</sup>=0.325) in the active group. These results indicate that 76.6% and 32.5% of the decrease in BMI, respectively, can be explained by the increase in medication and optimization in the irregularly active group that has participated in the project for more than 5 years and solicitude in the active group that has participated for 4 years or less.



**Table 12:** Multiple Linear Regression of BMI in Irregularly Active Groups with More Than 5 Years and Active Groups with Less Than 4 Years of Participation in the Water Aerobics Project

Classificat. IPAQ	Time of Participation in the Water Aerobics Project	Model	Unstandardized Coefficient		SC	t	Sig.	Collinearity Statistics	
			B	Standard Error	Beta			Tolerance	VIF
Irregularly Active	5 Years or More	Constante	56.148	4.129		13.600	.000		
		Medication	-5.622	0.922	-.971	-6.099	.000	.768	1.301
		Optimization	-3.608	0.853	-.673	-4.230	.001	.768	1.301
Active	4 Years or Less	Constante	32.830	1.469		22.343	.000		
		Solicitude	-1.403	.477	-.570	-2.942	.009	1.000	1.000

Note: VIF = Variance Inflation Factor; SC = Standardized Coefficient; IPAQ = Physical Activity Level.

#### IV. DISCUSSION

The context of this discussion involves the analysis of the relation between the physical activity level and time of participation of elderly people in a water aerobics project with successful aging, quality of life, musculoskeletal and osteoarticular disorders, chronic pain and body mass index as variables. The number of elderly people participating in water aerobics activities is higher in the active group who has participated in the activity for more than 5 years. Similar results were found in the study by Ferretti et al. (2019), with a predominance of active and very active elderly, representing 50% and 57.1% respectively, and a low classification of sedentary people (7.8%).

In regard to the physical activity level, in this study, the association with better quality of life and lower body mass index (BMI) stands out. A study by Toscano and Oliveira (2009) similarly concluded that the quality of life of elderly people who have a higher level of physical activity is better than those with a lower level of physical activity. In this scenario, higher levels of physical activity seem to intervene positively in the quality of life of the elderly.

Regarding BMI, in the study by Brito, Menezes and Olinda (2015), nutritional status was the only variable that did not show a statistically significant association with functional disability in both genders, despite the high prevalence of elderly people who presented inadequate nutritional status, either due to low weight or overweight/obesity. The highest prevalence of functional disability verified in this study was observed among elderly people who did not practice any physical activities, with inadequate nutritional status, who reported four or more diseases and who rated their health as poor.

As to the time of participation in water aerobics activities, the results showed a significant correlation in relation to the elective selection strategy and in relation to the solicitude in the presence of chronic pain,

evidencing certain accommodation in relation to their successful aging strategy. At the same time, they reveal autonomy, security and confidence in relation to their abilities, even in the face of situations such as the presence of chronic pain. Thus, demonstrating satisfaction in the affection and concern relationships with family members and close people. The great innovation in the context of successful aging, in Gonçalves's (2015) perspective, is the belief that aging is compatible with a healthy and full life, from a physical and mental point of view. Prevention plays a key role in this process. According to lifestyle, the aging process is different from person to person. Thus, an active lifestyle implies the performance of activities and the development of social networks, which may benefit health.

With the results of this study, it was possible to identify, in the irregularly active group, a better perception of quality of life and a longer time of participation in water aerobics activities associated with a lower intensity of pain perception. Likewise, better quality of life and control attitudes are associated with a lower prevalence of osteoarticular and musculoskeletal disorders. In regard to quality of life, the correlation analysis carried out in the study by Ferretti et al. (2018) demonstrated similar results, noting that the greater the quantity of disease and intensity of pain, the lower the quality of life score is.

Another relevant aspect found in this study reveals that the longer time of participation in the project is associated with disabilities, evidencing the fragility of the group in the sense of carrying out more intense activities. However, they are physically active and in sufficiently good health to practice water aerobics, considering their skills and limitations. Conversely, the study points out a significant correlation as to the time of participation in the water aerobics project with a decrease in the perception of chronic pain and better perception of quality of life.



In a way, these findings resonate with the findings of the study by Santos et al. (2015). The results showed that being physically active during leisure time is significantly associated with a lower prevalence of chronic pain. The practice of physical activities by the elderly, especially at leisure, provides opportunities for a more active, healthy and independent life, thus contributing to maintaining autonomy and improving quality of life.

However, it is important to refer to the study carried out by Castro et al. (2010), which aimed to investigate the effects of an exercise program on elderly women with complaints of pain and with osteoporosis/osteopenia in terms of functional autonomy. The highest percentage was in the condition of severe pain (37.09%) and another large percentage was composed of moderate and moderate to high levels. The minimization of pain for all participants extended to the condition of non-pain after the program for almost 14% of the elderly women, while the group with low and moderate pain increased. Most of the elderly women who felt severe pain changed to the situation of moderate pain. Therefore, the benefits of physical activity programs in preventing and improving pain are evident in that study.

In this context, the study by Oliveira et al. (2018) analyzed the effect of sedentary behavior on the practice of physical activity in elderly people who attend gyms. The study revealed that as the sedentary behavior increases, the performance of vigorous physical activities decreases and moderate activities increase. This occurrence has a certain association with the findings of this study, since sedentary behavior negatively affects the performance of vigorous activities in the elderly and positively the performance of moderate activities. In view of this evidence, it is clear that exercise is not an elixir for healthy living, but a regular regimen of physical activity has been shown to decrease morbidity and increase the quality of life enjoyed by the elderly population (Taylor, 2015). However, participation in physical activities and exercise plays an important role in preventing the progress of diseases and prolonging years of independent life (Powers & Howley, 2014).

The analysis carried out in the group of regularly active elderly people reveals a significant correlation between perception of chronic pain intensity with better responses in relation to quality of life, lower prevalence of osteoarticular and musculoskeletal disorders and lower levels of anxiety, stress and depression that make up the attitude of emotion in the face of pain. Similar information was expressed by the elderly people interviewed in the study by Cardoso et al. (2008), characterized as very active and with pathologies, who considered their health to be good without hindering the practice of physical activity.

The results obtained in relation to the time of participation of regularly active elderly people reveal

statistically significant correlations with successful aging strategies, specifically in relation to elective selection. The analysis in the active group still reveals that the compensation and optimization functions show a significant correlation with the variables that make up the attitudes towards the presence of chronic pain, with regard to solicitude and medication, demonstrating autonomy and independence in the way that the elderly people who practice water aerobics deal with adverse situations. Regarding this observation, the involvement in physical activities constitutes an important element in the physical and social well being of the elderly. In the study by Dellaroza et al. (2013), the pain complaint that bothered the elderly the most demonstrated an association with a greater degree of dependence in the activities of basic and instrumental daily life and in the alteration of mobility. Another relevant result found in the study by Lemos et al. (2019) demonstrates a negative influence of chronic pain on the quality of life of the elderly population and on the functionality and autonomy of these individuals. Thus, it is essential to ratify the inclusion of physical activities in the daily lives of the elderly in the context of improving quality of life, considering that aging is a natural, universal, irreversible phenomenon and does not occur simultaneously and equally in human beings (Borges et al., 2017).

Another relevant aspect evidenced in the group of active elderly people reveals a significant association of the level of physical activity with the variables that permeate successful aging, as well as the attitudes of medical healing, solicitude, emotion and control. These characteristics prove the relation of the time of participation in the water aerobics activity in the ambit of the pain condition, revealing the hopelessness in the medical healing and in an opposite way, expressing self-sufficiency in the ability to deal with the limitations and the discomfort of the injuries resulting from a chronic condition. Thus, so that aging can be used and lived in the best possible way, Montovani et al. (2006), ensures that the regular practice of physical activities provides greater independence, autonomy and better health condition, increasing the sense of general well being.

## V. CONCLUSION

Based on the objectives of this study, it is clear that the sense of participation in physical activities has been strengthening as one of the principles that aim to promote the improvement of the quality of life and physical functionality of the elderly population, reflecting on the multiple aspects that constitute biopsychosocial aging. Furthermore, this participation is linked to different factors, including older age and health condition with a certain fragility, since many of the participants in this study do not meet the regularly active classification, with regard to the physical activity level.

However, it is necessary to advance knowledge in this field, considering the characteristics of the aging process, old age and longevity, seeking innovation and quality in the scope of public practices and research, considering the growth of this population in Brazil and worldwide, as a phenomenon worthy of attention, study and investigation.

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GLOBAL JOURNAL OF HUMAN-SOCIAL SCIENCE: H  
INTERDISCIPLINARY  
Volume 24 Issue 6 Version 1.0 Year 2024  
Type: Double Blind Peer Reviewed International Research Journal  
Publisher: Global Journals  
Online ISSN: 2249-460X & Print ISSN: 0975-587X

## Racism in the Chronicles of Doctor Moacyr Scliar

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**Abstract-** The attention in this article falls on an expressive niche of Moacyr Scliar's literature – the chronicles. Expanding the proposal that the writer made use of his experiences to compose his works, it is highlighted that the media, and among them cinema, are the target of the writer's attention, they appear as a theme in his chronicles and appear in them as an intertext and intermediatic reference. It is identified that his performance as a chronicler is marked by the logic of the press, with publications in newspapers and books. After mapping the phases attributed to his literature, there is a thematic association between medicine and cinema in his chronicles, in which cinema and film works appear as a compositional resource, as a motive or setting, to exemplify complex issues or to illustrate reflections in a concrete way about racism.

**Keywords:** *chronicles; medicine; cinema; racism.*

**GJHSS-H Classification:** *LCC: PQ9697.S37, HT1521, PN1995*



*Strictly as per the compliance and regulations of:*



# Racism in the Chronicles of Doctor Moacyr Scliar

## O Racismo nas Crônicas do Médico Moacyr Scliar

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**Abstract-** The attention in this article falls on an expressive niche of Moacyr Scliar's literature – the chronicles. Expanding the proposal that the writer made use of his experiences to compose his works, it is highlighted that the media, and among them cinema, are the target of the writer's attention, they appear as a theme in his chronicles and appear in them as an intertext and intermediatic reference. It is identified that his performance as a chronicler is marked by the logic of the press, with publications in newspapers and books. After mapping the phases attributed to his literature, there is a thematic association between medicine and cinema in his chronicles, in which cinema and film works appear as a compositional resource, as a motive or setting, to exemplify complex issues or to illustrate reflections in a concrete way about racism.

**Keywords:** chronicles; medicine; cinema; racism.

**Resumo-** A atenção neste artigo recai sobre um nicho expressivo da literatura de Moacyr Scliar – as crônicas. Expandindo a proposta de que o escritor fez uso de suas vivências para compor suas obras, destaca-se que as mídias, e entre elas o cinema, são alvo da atenção do escritor, despontam como tema em suas crônicas e nelas aparecem como intertexto e referência intermediática. Identifica-se que, desde o início de sua produção literária, sua atuação como cronista está marcada pela lógica da imprensa, com publicações em jornais e em livros. Após mapear as fases atribuídas a sua literatura, verifica-se a associação temática entre medicina e cinema em suas crônicas, nas quais o cinema e as obras fílmicas aparecem como recurso composicional, como motivo ou ambientação, para exemplificar questões complexas ou ilustrar de modo concreto reflexões sobre o racismo.

**Palavras-chave:** crônica; medicina; cinema; racismo.

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### I. INTRODUÇÃO

No conjunto da produção literária do escritor e médico Moacyr Scliar (1937-2011) figuram mais de setenta livros de gêneros diferenciados, tais como romances, ensaios, crônicas, ficções infanto-juvenis e contos. O escritor gaúcho teve suas obras publicadas em mais de vinte países e foi reconhecido quatro vezes com o "Prêmio Jabuti", pelas obras: *O olho enigmático* (1986), categoria Contos; *Sonhos tropicais* (1992), categoria Romance; *A mulher que escreveu a Bíblia* (1999), categoria Romance; e *Manual da paixão solitária* (2008), categoria Romance, também escolhida obra de Ficção do Ano. O escritor colaborou por décadas como cronista em vários órgãos da imprensa no país, como a *Folha de São Paulo* e o *Jornal Zero Hora* (RS), e foi membro da Academia Brasileira de Letras a partir de 2003.

Na primeira etapa de sua carreira literária, Scliar elabora obras que tematizam a cidade de Porto Alegre e o Estado do Rio Grande do Sul. Isso foi pontuado por Regina Zilberman (2009), que dá o nome a essa fase de suas publicações, entre 1972 e 1977, de "os romances de Porto Alegre", entre os quais se destacam *Os mistérios de Porto Alegre* (cujo título alude a *Os mistérios de Paris*, de Eugene Sue, e a *Mistérios de Lisboa*, de Castelo Branco), livro constituído de contos e crônicas, de 1975, e *O ciclo das águas*, de 1977, reconhecido com o segundo lugar no Prêmio Érico Veríssimo de Romance. O segundo período dessa cronologia literária atribuída à sua obra dá-se pelo predomínio temático na interface judaísmo-Brasil, abarcando obras como *O centauro no jardim* (1980), *A estranha nação de Rafael Mendes* (1983) e *Cenas da vida minúscula* (1991), publicadas entre 1980 e 1991. O terceiro período abrange *A mulher que escreveu a Bíblia* (1999), *Os vendilhões do Templo* (2006) e *Manual da paixão solitária* (2008), e se caracteriza por "privilegiar personagens sugeridas pela leitura da Bíblia hebraica" (*Ibidem*, p. 116).

Na sua maneira de produzir, muitas vezes num só ano o autor publica obras de gêneros diferenciados. Isso se nota em 1984, ano em que, além do livro de crônicas *A massagista japonesa*, Scliar lança literatura infanto-juvenil (*Memórias de um aprendiz de escritor*) e as antologias *Dez contos escolhidos* e *Os melhores contos de Moacyr Scliar*. Em 1995 e em 2001, o mesmo

fenômeno é percebido: no primeiro, foram editadas as crônicas do *Dicionário do viajante insólito* e os infanto-juvenis *Um sonho do carço do abacate* e *Introdução à prática amorosa*; em 2001, verifica-se a publicação das crônicas de *O imaginário cotidiano* junto ao infanto-juvenil *Ataque do comando P. Q.* Nota-se, também nos casos assinalados, que a atuação do Scliar cronista ocorre de forma contínua e paralela à publicação de obras nos demais gêneros literários.

Com relação às crônicas, ele as escreveu por aproximadamente quarenta anos: publicou as primeiras no início dos anos 1970. Dos diversos gêneros a que se debruçou, a crônica de jornal esteve presente em sua trajetória do começo ao final, sendo, inclusive, “os últimos textos que o autor legou a seus leitores” (ZILBERMAN, 2012, p. 9), no início de 2011. A atenção neste artigo recai justamente sobre esse nicho da produção do escritor, as crônicas, e entre elas as crônicas médicas, no que poderia entender-se como manifestação de sua experiência de vida em sua literatura, visto que Scliar formou-se em medicina, em 1962, e doutorou-se em Saúde Pública com a tese *Da Bíblia à psicanálise: saúde, doença e medicina na cultura judaica*. Com relação à repercussão da atuação na medicina em sua literatura, pode-se considerar que tenha dado os primeiros passos de seu percurso literário ainda em tempos de faculdade, visto que, na seção “Sobre o autor” do livro *Dicionário do viajante insólito*, lê-se que “ao ingressar na faculdade de medicina, [Scliar] começou a escrever para o jornal *Bisturi*” (SCLiar, 2011, p. 133).

Do universo de suas crônicas, selecionam-se aquelas com temas ligados à medicina, a partir das quais se analisa a recorrência da menção ao cinema nessa parte da produção do autor. Expandindo a recorrente proposta de que o escritor fez uso de suas vivências (SZKLO, 1990; WALDMAN, 2003; ZILBERMAN, 2009) e de assuntos de interesse para compor suas obras – a cidade e o bairro onde cresceu, o judaísmo, a imigração, a atuação como médico e a formação em saúde pública – destaca-se que, como aspecto importante na segunda metade do século XX no país, as mídias, e entre elas o cinema, são alvo da atenção do escritor, aparecendo nas crônicas médicas como recurso composicional, no intertexto estabelecido com obras fílmicas (GOMES, 2009) e como referência intermediária (RAJEWSKY, 2012).

Identifica-se que o escritor recorre ao cinema como motivo e recurso composicional e de ambientação, tomando-o como parte da paisagem cultural da cidade e da sociedade de seu tempo, como algo a ser considerado como parte da cena e da vida de todos os dias com a qual tece suas crônicas. A sua proximidade das mídias eletrônicas e da cultura popular e midiática se manifesta, também, no fato de escrever para jornal, ademais de trazer o cinema como motivo em sua obra.

Quanto à combinação de elementos temáticos, ou seja, do que se manifesta em sua obra como seleção (incluir e excluir) e hierarquia (no sentido de ser mais ou menos central na composição) de certos elementos da realidade e da experiência social, interessa explorar se a vivência do escritor como médico se expressa em sua obra, e sobre a intersecção que estabelece dos temas ligados à saúde com a menção ao cinema. Observa-se que Scliar valeu-se de seus conhecimentos médicos como material para as suas criações literárias, o que se verifica, por exemplo, no fato de o escritor gaúcho ser autor de 21 obras com temática médica. Por essa trajetória, diz-se que Scliar está inscrito numa linhagem de médicos-escritores, como Pedro Nava (1903-1984) e Guimarães Rosa (1908-1967). No que tange especificamente às crônicas, essa temática aparece esparsa em seus livros, é tema recorrente de muitas das suas publicações, assim como esteve regularmente presente nas que publicou exclusivamente em jornal.

Na elaboração desse artigo, as maiores dificuldades encontradas na etapa de procura, uma vez que nem todas as crônicas de Scliar estão publicadas em livros. Devido a isso, foi necessária uma minuciosa pesquisa na Internet para encontrar as demais crônicas, tendo em vista que a grande maioria das suas crônicas foram escritas durante o período que ele trabalhou nos jornais *Zero Hora* e *Folha de São Paulo*. Ou seja, das muitas crônicas publicadas nesses jornais, ainda há aquelas que ainda não foram compiladas em livros. Por isso, foram desenvolvidas pesquisas constantes no site do autor e na Internet de um modo geral a fim de se reunir todos os textos nos quais o autor menciona o racismo. A leitura dos textos encontrados levou à constatação de que o escritor gaúcho menciona o racismo não somente nas suas crônicas médicas, pois ele também desenvolve essa temática quando escreve sobre outros assuntos como o futebol e a política. Todavia há que se observar que, como o cerne dessa pesquisa foi o racismo nas crônicas *médicas*, essa foi a abordagem estritamente seguida tanto na investigação como na divulgação dos resultados obtidos. As crônicas médicas são os textos que abordam diretamente questões relacionadas à saúde ou à atuação dos médicos.

## II. A CRÔNICA E O CRONISTA MOACYR SCLiar

No ensaio *Cronista e leitor*, Zilberman afirma que a crônica é um gênero de difícil demarcação, pois pode tratar de fatos contemporâneos, narrar tanto histórias verídicas como imaginárias, lembrar pessoas e acontecimentos, realizar comentários sobre literatura ou outras expressões culturais. Por sua lógica de produção e de consumo, a crônica, assim como o folhetim, é constitutivamente um gênero poroso à

atualidade (MARTÍN BARBERO, 1987), ou tem porosidade de assuntos, segundo Granja (2015). A sua primeira acepção, explica Fischer (2004), derivava do latim *chronica* – relato, história escrita ou narrativa de fatos dispostos em ordem cronológica –, mas o termo migrou desde o domínio do relato histórico para o literário, e logo depois passou a ser utilizado na literatura em um gênero específico ligado ao jornalismo.

Dentre os escritores das crônicas modernas está Moacyr Scliar, considerado um dos maiores cronistas brasileiros, escrevia regularmente em jornais de circulação regional e nacional. O escritor foi um defensor da crônica na literatura brasileira, considerando-a um gênero literário importante; seu uso, contudo, era mais ou menos imediato, diferente da ficção (romance), gênero no qual uma boa ideia pode ficar amadurecendo por anos (FISCHER, 2004, p. 7-17). Parte de suas crônicas foram inspiradas em matérias de jornais. Em seu processo de criação, dizia precisar de um elemento desencadeante e, nesse processo, a notícia de jornal cumpria esse papel, dizia Scliar:

[...] pode ser um episódio histórico, uma pessoa que conheci, uma história que me contaram, uma notícia de jornal.... Daí em diante é uma incógnita. Sou muito rápido escrevendo para jornal, mas quando se trata de uma ficção mais longa é diferente; aí períodos de rapidez se alternam com outros de muita lentidão, resultante de dúvidas que vão desde a questão do foco narrativo até a incerteza quanto à validade do projeto [...] (ZILBERMAN, 2009, p. 118).

O trecho é referente a uma entrevista concedida pelo escritor em 2009, quando há décadas escrevia e publicava em jornais. Também em sua autobiografia, intitulada *O texto, ou: a vida: uma trajetória literária*, fala sobre seu processo de criação e sobre as diferentes rotinas criativas relativas à elaboração (i) de crônicas para serem publicadas por jornais e (ii) de romances, concebidos para serem lidos em livros.

É uma experiência no mínimo curiosa passar da página do livro para a página do jornal. Sim, em ambos os casos trata-se de texto impresso, destinado a um público, mas as diferenças são grandes, e históricas. [...] Os escritores escreviam para a eternidade; os jornalistas estavam presos aos assuntos do momento, nem sempre agradáveis. [...] Os escritores podiam fazer pesquisas formais, mesmo que estas resultassem em textos obscuros; os jornalistas tinham, e têm, a obrigação da clareza. (SCLIAR, 2007a, p. 237-238).

O fragmento acima dialoga com parte do que Scliar menciona na entrevista intitulada *Falar com Deus? Só se for com ligação a cobrar*, na qual esclarece que não se considera jornalista, mas sim um colaborador de jornal que abomina ouvir gente que deprecia o jornalismo. Ele afirma: “[...] o meu convívio com o jornalismo foi contínuo. Aprendi, em primeiro lugar, a fazer um texto enxuto. Aprendi a ir direto ao ponto,

entregar o texto na hora”, além de precisar escrever “com muita antecedência por causa dos problemas de ilustração”. Relacionando essas considerações à explanação acerca do embate entre o livro e o jornal, Scliar pondera que no país “surgiu um gênero que se tornou o elo de ligação entre literatura e o espaço jornalístico: a crônica”. No jornal, a crônica é “um respiradouro, uma brecha na massa não raro sufocante de notícias” (SCLIAR, 2007a, p. 239).

Este trabalho vale-se do depoimento de Scliar não como intento de, como afirma Iser (2013) em *O fictício e o imaginário*, indagar sobre a psique do autor para desvendar suas intenções. Tal como sustenta Iser (2013, p. 37), entende-se que seja “provável que a intenção não se revele nem na psique nem na consciência, mas que possa ser abordada apenas através das qualidades de manifestação que se evidenciam na seletividade do texto face a seus sistemas contextuais”. Aqui o testemunho de Scliar é entendido, de tal forma, como elemento transtextual, no sentido de Genette (2006), como forma estendida de paratextualidade ou metatextualidade, que acrescenta e desdobra aspectos de seus processos de criação, e repercute em sua fortuna crítica.

Em termos de publicações, a atuação de Scliar como cronista começa em 1984, ano em que é lançada a primeira edição de *A massagista japonesa*, seguida, em 1989, por *Um país chamado infância*. Em 1995, vem à lume as crônicas do *Dicionário do viajante insólito*, que recebeu o Prêmio Açorianos, e um ano depois chega às livrarias *Minha mãe não dorme enquanto eu não chegar*. Em 2001, edita *O imaginário cotidiano*, também laureado com o Prêmio Açorianos, e neste mesmo ano publica *A língua de três pontas: crônicas e citações sobre a arte de falar mal e A face oculta: inusitadas e reveladoras histórias da medicina*. Em 2004, trabalhando num projeto da Editora Global, Fischer seleciona textos para o livro *Moacyr Scliar*, expondo essa vertente do escritor para a Coleção Melhores Crônicas. Em 2005 lança *O Olhar Médico*, em 2009, *Histórias que os jornais não contam*. Com a morte do autor, em 2011, as publicações passam a ser póstumas, e Zilberman seleciona crônicas para as seguintes compilações: *A poesia das coisas simples* (2012) e *Território da emoção: crônicas de medicina e saúde*, *A banda na garagem* (2014) e *A nossa frágil condição humana* (2017). Desses, apenas *Território da emoção*, *A face oculta* e o *Olhar médico* reúnem crônicas médicas no todo, enquanto os livros de 2012 e de 2014 trazem algumas crônicas médicas esparsas entre textos de outro enfoque.

Por cerca de 40 anos, do início dos anos 70 a 2011, Moacyr Scliar publicou crônicas regularmente no jornal *Zero Hora*, do Rio Grande do Sul. Publicou nos cadernos *Vida e Donna*, na coluna *A Cena Médica*, mantendo uma coluna semanal no caderno de *Notícias*. Os temas, como sugerem as variadas editorias e

suplementos onde publicava, eram diversos, abarcando desde questões de saúde, vida familiar, passando também por assuntos cotidianos da cidade e do estado, reservados principalmente à coluna das terças-feiras, na página 2 do jornal. Sobre sua participação para o Caderno *Vida* do Jornal *Zero Hora*, ele afirmou tratar-se de um trabalho importante, porque é uma forma de escrever sobre Medicina de maneira mais humanista. Já no jornal *Folha de São Paulo*, Scliar escreveu a partir de 1993, na seção *Cotidiano*, com crônicas inspiradas em notícias de jornais, sendo que algumas delas são crônicas médicas. Atuou como cronista, ainda, no *Correio Braziliense*, do Distrito Federal, de 2006 a 2011, escrevendo para o caderno *Diversão e arte*.

Examinando as crônicas de Scliar publicadas na *Folha de São Paulo*, Lealis Guimarães (1999, p. 161) toma como *corpus* de análise cinco crônicas e aponta que, nelas, “o humor é inerente à criação literária, manifestando-se através do procedimento paródico”, que se combina, em seu efeito estético, à exploração de “assuntos insólitos, ou constringedores, do cotidiano veiculado pela notícia, para promover efeitos tragicômicos”. Com respeito à leitura, com suas crônicas passa-se “ao mundo do imaginário e, nesse transporte do real para o fictício, [...] que funciona como crítica às ordens e valores predeterminados”. Do *corpus* analisado por Guimarães (1999), o único texto que se enquadra no perfil de crônica médica é *Consultando no posto de saúde fantasma*, elaborada a partir de uma notícia desanimadora sobre o sistema de saúde, na qual nota-se um “humor crítico diante do fato noticiado” (GUIMARÃES, 1999, p. 121-122).

*O imaginário cotidiano*, Moacyr Scliar (Coleção Melhores Crônicas), *Histórias que os jornais não contam* e *A banda na garagem* têm em comum reunirem crônicas inspiradas em notícias de jornal. Esses livros apresentam a seguinte disposição: logo após o título da crônica, é apresentada a notícia que serve de inspiração e, em seguida, vem o texto de Scliar. Algumas das crônicas desses livros apresentam temáticas relacionadas à Medicina, que são compostas de personagens em situações nas quais se reportam superficialmente aspectos da Medicina. Desses textos, pode-se mencionar “Ele (ex-ela) e ela (ex-ele)”, cujo narrador cria uma história sobre as dificuldades de adaptação vivenciadas por um casal que muda de sexo. Esse texto integra Moacyr Scliar (2004, p. 215-216), “uma reunião de crônicas que o destacam no gênero com maior nitidez” (HANCIAU, 2012, p. 118). Sobre a pertinência de classificá-los como crônicas, os textos inspirados em manchetes de jornais, no entender de Zilberman (2012, p. 16), devem ser assim considerados, pois “crônicas são também narrativas de eventos efetivamente ocorridos ou imaginários”. Para Scliar, porém, por serem ficcionais, esses textos não seriam crônicas. Em entrevista concedida a Fischer, o

escritor comenta sobre os limites entre crônica e outros gêneros:

[...] acho, sim, que os limites da crônica são claros. Crônica não é conto: é um comentário sobre a realidade, portanto exclui ficção (ainda que, na Folha de São Paulo, eu escreva um texto ficcional baseado em notícias de jornal. Mas eu não o chamo de crônica. Nem de conto. É uma espécie de crônica ficcionalizada). Crônica não é um gênero tão erudito quanto o ensaio. Crônica não é tão factual quanto o artigo (sobre política, por exemplo). (SCLiar *apud* FISCHER, 2011, p. 102).

O *Dicionário do viajante insólito* reúne uma coletânea de crônicas inspiradas em viagens de Scliar, e contém apenas um texto no qual há referência à medicina: *G de Gueixa*, cujo personagem sonha em se deitar com uma gueixa. Seu chefe o convida para uma viagem ao Japão e, em seu quarto de hotel, ele “solicita” uma gueixa. A visitante é velha e cega, ele tenta se desvencilhar dela e machuca a coluna, necessitando assim ceder aos cuidados da gueixa, que era, de fato, apenas massagista (SCLiar, 2011, p. 35-38). Publicada em 1996, *Minha mãe não dorme enquanto eu não chegar* é outra obra que dispõe uma única crônica sobre saúde. Intitulada *Pietá*, que narra o sofrimento do escritor com a perda de sua mãe, acometida por um câncer, e de sua impotência, como médico, perante a situação (SCLiar, 1996, p. 44-46).

Em *A massagista japonesa*, há textos que remetem a questões relacionadas à saúde. A narrativa que intitula o livro é, com ligeiras modificações, a mesma de “G de Gueixa”, de o *Dicionário do viajante insólito*. Há outros textos nos quais são contadas histórias entremeadas de resquícios de conselhos médicos, como *Ponte de safena*, *A um bebê com cólicas*, *Data certa*, *Decisão*, *O homem que corria* (SCLiar, 1984, p. 23-24, 53-54, 75-78, 107-109). *A língua de três pontas: crônicas e citações sobre a arte de falar mal* (2001) dispõe um capítulo intitulado *Falando mal da medicina*, no qual Scliar apresenta um histórico da evolução da medicina, seguido das citações que coligiu relacionadas à desconfiança nutrida por muitos sobre a atuação dos médicos (SCLiar, 2001, p. 54-66).

Observam-se, em suas crônicas médicas, como no dizer de Iser (2013, p. 37), as “qualidades de manifestação que se evidenciam na seletividade do texto face a seus sistemas contextuais”, identificando que a prática médica serviu de mote para sua literatura. Sobre a presença dessa prática em suas obras, Hanciau (2012, p. 114) afirma que “o texto exato, objetivo e cortante, Scliar certamente herdou dos prontuários médicos, que escreveu ao longo da vida e que, embora frios, trazem implícitas todas as dores do mundo. Os anos de Medicina ensinaram a diagnosticar a insondável criação literária”.

Na trajetória literária de Scliar, as crônicas não são secundárias. A inserção do escritor na imprensa é

notória, tanto que Zilberman (2017, p. 5) observa que “além de duradoura, a participação de Scliar no jornalismo gaúcho, em especial em *Zero Hora*, foi intensa, resultando em mais de 5 mil crônicas”. Antes do *Zero Hora*, escreve para o jornal universitário *Bisturi*, quando cursava Medicina, e, desde 1984, publica suas crônicas também em livro. Ao todo, foram 37 anos de produção contínua no gênero, e em parte dessa produção se verifica a sistemática tematização da medicina e o intertexto com o cinema na composição dos textos, muitas vezes de forma associada. Combinadas às três fases temáticas atribuídas à sua literatura – a cidade de Porto Alegre, a interface judaísmo-Brasil e a releitura de personagens bíblicas –, neste trabalho se propõe que, no tocante às crônicas, há outros dois temas significativos que marcam sua obra, as crônicas médicas: o tema da saúde e da prática da medicina, por um lado, e o intertexto com filmes e a produção cinematográfica, por outro.

### III. O RACISMO NAS CRÔNICAS MÉDICAS DE MOACYR SCLIAR

Ao longo da sua trajetória, Scliar produziu poucas crônicas médicas abordando o racismo, mas nelas a sua mensagem antirracista ficou bem delineada. Por ser médico e professor de História da Medicina, o escritor gaúcho denunciou o preconceito racial nesse meio. Nesse sentido, veio a lume o texto *O amante latino: raízes biológicas* no qual Scliar relembra uma fala proferida pelo cientista James Dewey Watson (1928), laureado com o Prêmio Nobel de Medicina quando tinha 34 anos. Conferencista reverenciado, aos 72 anos Watson “escandalizou o público na Universidade de Berkeley com suas — para dizer o mínimo — heterodoxas ideias sobre sexualidade” (SCLIAR, 2001b, p. 157). Watson afirmou que homens com mais melanina – o pigmento que dá cor escura à pele – teriam mais desejo sexual que os de pele clara. “Nada disso, naturalmente, está confirmado”, mas veio “ao encontro de dois estereótipos norte-americanos. Um deles: os negros teriam um desejo sexual excessivo, especialmente por mulheres brancas. O número de infelizes linchados pela Ku Klux Klan com base nesse argumento [...] foi enorme” (SCLIAR, 2001b, p. 157-159).

Na visão de Scliar, James Watson quis dar base científica a um estereótipo, mesmo sendo notório que “sexo não depende só de moléculas” (SCLIAR, 2001b, p. 159). Sabe-se que o estereótipo é baseado no senso comum, que é utilizado para definir/categorizar um indivíduo quanto a sua identidade ou comportamento a partir do seu gênero, condição social, religião, cultura e entre outros. Há diversos tipos de estereótipos, na crônica nota-se o estereótipo racial que, assim como os demais, é inaceitável. Retomando o contexto da crônica, observa-se que outro estudioso

norte-americano denunciou o quanto James Watson foi vil ao querer dar base científica a um preconceito fundamentado em estereótipos. Após a polêmica, Watson precisou se desculpar perante a comunidade científica e também perante a sociedade. Felizmente houve essa refutação, pois esses equívocos perniciosos provêm do período colonial e foram usados como justificativas para muitas outras injustiças, como os estupros praticados contra mulheres negras nas sociedades escravistas: “vistas como portadoras de uma sensualidade exagerada ou como mulheres passivas – interpretação adotada pelo abolicionismo inglês [...] –, quase sempre a culpa do abuso era atribuída às vítimas” (MACHADO, 2018, p. 338).

É evidente que Scliar deixa bem delineada sua perspectiva antirracista na referida crônica, mas também se percebe, em outra parte dela, o humor que costuma acompanhar os escritos do médico gaúcho. Ele admite que a fala equivocada de Watson pode incluir uma “versão mais *light*, mais aceitável — e mais conveniente”. Nesses termos, Scliar destaca o mito da

história do amante latino, consagrado por Hollywood. A primeira figura dentro do paradigma foi o lendário Rodolfo Valentino (1895-1926). Nascido Rodolfo d'Antongoulia, era um imigrante vindo do sul da Itália, que trabalhou como dançarino até ser descoberto pelo cinema, tornando-se o primeiro ator com *sex appeal* que não correspondia ao tipo americano clássico. De imediato, a indústria cinematográfica descobriu o filão. E também a indústria do turismo. A Cuba de Fulgencio Batista, o Caribe em geral, [...] tornaram-se destinos preferenciais para mulheres americanas de meia-idade, endinheiradas e sexualmente insatisfeitas [...] Nem todos (e nem todas) eram fãs do amante latino. Em 1936 apareceu na *Esquire* um artigo da jornalista Helen Brown Norden, [...] que viajara a Cuba em busca de amantes, voltou decepcionada. Os tais latinos, disse, vestem-se mal, bebem demais, não sabem dançar, estão sempre se coçando ou contando anedotas inconvenientes sobre gases. E, por fim, a grande denúncia: fracassam na cama, mesmo fazendo uso dos mais variados afrodisíacos. Norden citava a opinião de uma amiga de Manhattan, para quem, no sexo, “os piores americanos são melhores do que os melhores cubanos”. (SCLIAR, 2001b, p. 158-159)

Publicada originalmente em 29 de abril do ano 2000 e posteriormente compilada no livro *Território da emoção* (2013), na crônica *Medicina e racismo* Scliar conta a história do Dr. Cecil Helman que é um médico comunitário e teve uma experiência comovente na África do Sul na época do *apartheid*. Nesse texto, ele relata que esteve em um hospital onde existiam as alas dos brancos e as dos “não brancos”. O hospital apresentava uma maneira de organização nitidamente racista a tal ponto de até os termômetros destinados aos pacientes brancos serem separados dos utilizados pelas pessoas negras. Como forma de protesto contra essa discriminação, um dos médicos propositalmente invertia os termômetros. Sua intenção era reafirmar – ao



menos para si – que todos somos iguais independentemente da cor da pele (SCLiar, 2013, p. 61-62).

Outro texto no qual Scliar aborda a temática do racismo é *Em busca de tolerância*. Publicada originalmente em 15 de abril de 2006 e atualmente disponibilizada apenas no *site* do escritor, nessa crônica o intelectual gaúcho escreve sobre o filme que conta a história de um menino que é cristão e foi obrigado a se tornar judeu devido a falta de alimento e os bombardeios em seu território. Ele enfrentou diversos problemas para conseguir sobreviver e tornar-se médico, porém, ao alcançar esse objetivo, o preconceito contra a cor de sua pele se torna um dos seus maiores obstáculos.

Em uma tentativa de fazer com que seu filho de apenas nove anos sobrevivesse, sua mãe o batizou como judeu dando-lhe o nome de Schlomo (Salomão em hebraico) e o colocou para adoção, ele foi adotado por uma família de Tel Aviv (capital de Israel). Com isso, Schlomo consegue estudar para medicina, mas lá ele começa a ser chamado de *Kushi* (negro em hebraico). Essa história foi transposta para o cinema. Tornou-se um filme na França conhecido como “Um herói de nosso tempo”, foi lançado em 2005 e tem uma duração de 2 horas e 22 minutos, esse filme teve o apoio de diversas instituições, de professores, de ONGs. Scliar ainda diz que dificilmente iremos encontrar um filme que tenha um apelo tão grande à coexistência e à tolerância.

Na época em que se passa a história do filme, o preconceito em relação à cor da pele e à religião era demasiadamente alto. Scliar resolveu trazer essa película como indicação para a população, para que eles percebessem o quanto as pessoas naquele país sofriam com todo aquele preconceito, fosse pelo racismo, pela intolerância religiosa ou pelas guerras, eles não tinham paz em momento algum. Esse filme é um espetáculo, a história passa em dois países que a realidade era cruel, nele não existe nenhum tipo de humor, apenas a realidade que aqueles países viveram e vivem até os dias de hoje. No passado a África sofreu com a fome e com o racismo; infelizmente pouco mudou, e Scliar queria mostrar isso para a sociedade.

#### IV. CONSIDERAÇÕES FINAIS

Conclui-se que nas crônicas médicas nas quais Scliar aborda o racismo a postura desse escritor é a de se posicionar contra o preconceito, ou seja, Scliar é nitidamente antirracista. Num desses textos, o escritor demonstra-se preocupado com o enraizamento do racismo no nicho médico no sentido de que até mesmo cientistas renomados podem vir a incorrer nessa prática repugnante. Por outro lado, o médico da crônica “Medicina e racismo” agia de modo contrário aos seus colegas racistas, pois de forma intencional invertia os

termômetros destinados a pacientes brancos e pacientes negros. Sua atitude pode ser compreendida como uma forma de resistência a uma prática racista da qual ele é um dos poucos que não concorda no nicho médico do qual faz parte. Noutra crônica percebe-se a sociedade agindo com preconceito para com um indivíduo que tanto se dedicou para se graduar em Medicina e servir às pessoas. O cinema, constante da atenção do escritor, comparece nas crônicas médicas como um importante recurso composicional, no intertexto estabelecido com obras fílmicas, sinalizando para o leitor o quanto a sétima arte pode ajudar no processo de conscientização contra o racismo.

É necessário denunciar e combater a prática racista e a literatura de Scliar faz-se engajada num importante projeto humanista e humanizador no sentido de conscientizar a sociedade a erradicar esse retrocesso. Scliar esforçou-se muito nesse projeto e nossa exposição se debruçou em delinear essa ação meritória.

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GLOBAL JOURNAL OF HUMAN-SOCIAL SCIENCE: H  
INTERDISCIPLINARY  
Volume 24 Issue 6 Version 1.0 Year 2024  
Type: Double Blind Peer Reviewed International Research Journal  
Publisher: Global Journals  
Online ISSN: 2249-460X & Print ISSN: 0975-587X

## Dermatologic Manifestations in Patients with Metabolic Syndrome in Brazil

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**Abstract-** Metabolic syndrome (MS), a cluster of cardiovascular risk factors associated with increased mortality, exhibits systemic manifestations in various organs, including the skin. This study aimed to investigate the prevalence of dermatological manifestations in patients with MS attending primary healthcare units staffed by Family Health residents in Gurupi, Tocantins, Brazil. This descriptive, cross-sectional epidemiological study enrolled 93 men and women aged between the ages 25 and 60 y across four Basic Health Units and used a questionnaire administered during medical consultations. In total, 69.89% of samples exhibited dermatological manifestations. Morbid obesity was the leading factor linked to MS and skin alterations, with 100% of these patients presenting with some form of dermatosis, the most identified cutaneous manifestations by prevalence were erythematous lesions, papules and plaques, vesicles and blisters, scaling, and changes in pigmentation.

**Keywords:** *cutaneous manifestations; family health; health services; primary health care.*

**GJHSS-H Classification:** *LCC: RL71, RA645.M46*



*Strictly as per the compliance and regulations of:*



# Dermatologic Manifestations in Patients with Metabolic Syndrome in Brazil

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**Abstract-** Metabolic syndrome (MS), a cluster of cardiovascular risk factors associated with increased mortality, exhibits systemic manifestations in various organs, including the skin. This study aimed to investigate the prevalence of dermatological manifestations in patients with MS attending primary healthcare units staffed by Family Health residents in Gurupi, Tocantins, Brazil. This descriptive, cross-sectional epidemiological study enrolled 93 men and women aged between the ages 25 and 60 y across four Basic Health Units and used a questionnaire administered during medical consultations. In total, 69.89% of samples exhibited dermatological manifestations. Morbid obesity was the leading factor linked to MS and skin alterations, with 100% of these patients presenting with some form of dermatosis, the most identified cutaneous manifestations by prevalence were erythematous lesions, papules and plaques, vesicles and blisters, scaling, and changes in pigmentation. The high prevalence of dermatological manifestations in patients with MS with pseudoacanthosis nigricans being the most frequent, can alert healthcare professionals to suspect MS and prevent long-term complications.

**Keywords:** cutaneous manifestations; family health; health services; primary health care.

## I. INTRODUCTION

Metabolic syndrome (MS) presents a considerable challenge in primary care because of its complex nature and negative impact on health. This chronic, non-communicable disease (NCD) clusters metabolic disorders, including dyslipidemia, glucose intolerance, and insulin resistance (IR) [1, 2], doubles the risk of death and quintuples the risk of developing type 2 diabetes mellitus (T2DM) [3]. According to the International Diabetes Federation (IDF), approximately one-quarter of adults suffer from MS globally and face two and three times the risk of death and stroke, respectively, compared with the general population [4, 5].

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Studies in South America revealed a wide range of MS prevalence, from 12.3% to 44.6%, which is influenced by the chosen diagnostic criteria. In Brazil, the reported prevalence is 29.6% [6], for adults, even soaring to 40% in those over 60 years of age [7]. However, some studies, relying on self-reported numerical criteria, estimate a lower prevalence of 9%. This discrepancy is likely due to underestimation, highlighting the importance of standardized assessments for accurate diagnosis and a comprehensive understanding of MS prevalence and its components [8, 9].

A prevalence study in the northeastern region revealed that 50.7% of adults with T2DM also have MS. This dual burden, characterized by the accumulation of cardiometabolic changes, inflicts extensive economic and social losses [2, 10]. In addition, genetic predisposition, IR, abdominal obesity, physical inactivity, unhealthy diet, chronic inflammation, and hormonal imbalances could all contribute to the MS development [6]. The latest health report released by the World Health Organization in 2018 highlights the rising prevalence of chronic NCDs, such as MS and emphasizes the need for continued research on their risk factors to inform effective control measures [11].

MS involves a cluster of metabolic alterations including arterial hypertension, abdominal obesity, dyslipidemia, and impaired glucose metabolism. Although several studies have estimated MS prevalence using the Adult Treatment Panel III criteria (NCEP, 2001), it is recommended to adopt a standardized set of criteria for improved comparisons and study effectiveness [12].

According to the IDF criteria for diagnosing MS, an individual must have a high waist circumference and at least two of the following: triglycerides (TG)  $\geq 150$  mg/dL, high-density lipoprotein cholesterol  $< 40$  mg/dL (men) or  $< 50$  mg/dL (women), blood pressure  $\geq 130/85$  mmHg or use of antihypertensive drugs; and fasting glucose  $\geq 100$  mg/dL or a previous diagnosis of T2DM [4,13].

As obesity is a component of MS, individuals with obesity often have elevated levels of glucose, insulin, IR, or inflammatory markers [14]. Chronic inflammation and increased adipose tissue lead to an increase in inflammatory signals, which trigger IR, boost glucose, TG, and low-density lipoprotein, while

hyperinsulinemia promotes renal sodium reabsorption and stimulates the sympathetic nervous system, leading to endothelial cell dysfunction and inhibition of nitric oxide, a vasodilator [15, 16].

The link between the skin and IR is intriguing, as certain hormones, such as alpha-melanocyte-stimulating hormone, participate not only in melanin production, but also in insulin signaling, impacting food regulation [17, 18]. Therefore, the mechanisms affecting insulin sensitivity also influence skin equilibrium [14, 19, 20].

Hyperinsulinemia, often triggered by insulin receptor insensitivity, stimulates keratinocyte and fibroblast growth by activating insulin growth factor-1 receptors. This growth can manifest in various skin conditions. Chronically high levels of pro-inflammatory molecules, on the other hand, can induce IR, leading to microvascular dysfunction. This includes the accumulation of harmful advanced glycation end products, impaired epithelial homeostasis, and reduced blood flow and nutrient supply to the skin [14, 21, 22].

This microcirculatory alteration is an established mechanism in diseases such as obesity, T2DM, arterial hypertension, and MS [23–25]. Furthermore, even in the prediabetic or normoglycemic stages, metabolic dysfunction preceding hyperglycemia can cause damage due to increased insulin resistance, oxidative stress, and activation of inflammatory pathways [24, 26]. Therefore, cutaneous manifestations, common with metabolic alterations, can potentially serve as an early warning sign for MS or indicate its severity [14, 19, 21]. This two-way street arises from shared biomarkers, such as hyperinsulinemia, oxidative stress, and inflammatory markers, including interleukin-6. Studies have confirmed the elevated levels of these markers in various cutaneous pathologies and MS, highlighting their strong association.

Strong associations have been established between MS and conditions, such as acanthosis nigricans, acne, and psoriasis. Acrochordons, androgenetic alopecia, hidradenitis suppurativa, recurrent aphthous stomatitis, and hirsutism also show potential links with MS, whereas other conditions, such as diagonal earlobe crease, Garrot's nodules, rosacea, lichen planus, vasculitis, scleroderma, and keratosis pilaris, have demonstrated moderate connections [14, 16, 27–30].

Although reports have indicated a correlation between MS and dermatological alterations, the underlying mechanisms remain poorly understood. This lack of a complete understanding underscores the need for further exploration of this connection. Primary healthcare plays a fundamental role in the Brazilian healthcare system, encompassing a broad segment of the population, and directly impacting health promotion. However, the lack of targeted investigations into this specific reality can compromise the quality of the

medical care provided, as interventions may not adequately reflect local needs and characteristics. Thus, it is imperative to address this gap through studies addressing relevant health issues in Brazilian primary healthcare to provide a solid foundation for more effective and locally adapted clinical practices [16, 31].

Therefore, our study aimed to assess the prevalence of dermatological manifestations associated with MS in patients attending primary healthcare units in Gurupi, Tocantins, where Family Health residents work. By meticulously examining the profile of this population, we aimed to achieve several key objectives: track the frequency of both MS and its associated dermatological manifestations, inform the development of proactive methodologies, empower healthcare professionals through targeted engagement and training, and facilitate the efficient resolution of the challenges posed by this intriguing interplay between metabolic dysfunction and skin health.

## II. MATERIALS AND METHODS

The study was conducted from August to November 2021 as a descriptive cross-sectional epidemiological investigation. We selected Gurupi, located in the southern Tocantins, as the study setting. Gurupi, with an estimated population of 86,647, according to the Brazilian Institute of Geography and Statistics, is the state's third-largest city and serves as a regional hub for the south.

Four basic health units (*Unidades Básicas de Saúde* [UBS]) participating in the University of Gurupi's Medical Residency Program for Family and Community Health were selected. These units, strategically chosen for their large service area, strong professional communication network, and potential for future community-wide interventions, were: Hélio Naves Cansado (Vila Íris), João Manoel dos Santos, Ulisses Moreira Milhomem (Pedroso), Miguel Peres de Carvalho (Vila Nova).

After obtaining authorization from the Municipal Health Department and approval from the Research Ethics Committee of University of Gurupi (opinion number: 4.880.322), informed consent was obtained. All volunteer participants who completed the questionnaire during their medical consultations signed an informed consent form (ICF). The study population included adults (> 18 y) of both sexes, pregnant women, and older adults residing within the selected UBS catchment areas who signed the ICF. The investigated public corresponds to 39% men and 61% women. Patients under 18 years old, those declining informed consent, and individuals not residing within the UBS areas were excluded. Our sample comprised all UBS patients seen by resident physicians who either had a preexisting MS diagnosis or received MS confirmation through questionnaire administration.

Owing to the COVID-19 pandemic and restrictions on elective consultations, the number of patients examined in the four selected units was lower than anticipated during the study period (August to November 2021). Approximately 5,920 services were provided during these 4 months. Given the estimated 30% prevalence of MS in the Brazilian population (NCEP, 2001), this would yield a potential study population of 1,776 individuals. Based on a predetermined sample size calculation with a 5% margin of error and a 95% confidence interval (<https://calculare.com.br/calculo-amostal/>), 316 participants were recruited. However, the final sample size of 93 represented only 29.43% of the planned target, owing to the impact of the pandemic.

Following the administration of the questionnaire, data were entered into an Excel 2016 (Microsoft Corporation, Redmond, WA, USA) spreadsheet. Demographic and clinical characteristics are described in the tables and figures. The chi-square test was used to assess the association between skin diseases and demographic and clinical characteristics, whereas the odds ratio (OR) was used to analyze the risk of acquiring one or more dermatoses. A two-tailed p-value was used in this study and  $p \leq 0.05$  was considered statistically significant.

### III. RESULTS

The study sample differed from the initial expectations owing to the COVID-19 pandemic. Family Health Strategy teams were directed to prioritize care for suspected COVID-19 cases, thereby significantly reducing the number of consultations available. Consequently, we enrolled 93 patients with MS, representing 29.43% of the anticipated sample size.

Among the participants, 65 (69.89%) exhibited some form of skin alteration. The sample was predominantly female (70.97%), with 52.69% aged between 40 and 60 years. Moreover, a high prevalence of comorbidities was observed (50.54% had diabetes, 73.12% had hypertension, and 84.95% had a waist circumference exceeding 88 cm in women and 102 cm in men). Furthermore, 91.83% of participants were overweight or with obesity (Table 1).

Correlating demographic and clinical factors with the presence of any dermatological alterations revealed an association between morbid obesity (body mass index [BMI] > 40) and skin conditions (Table 1).

Among the identified skin alterations, pseudoacanthosis nigricans was the most common, affecting 33 patients (50.77%). Androgenetic alopecia was observed in 23 patients (33.8%), followed by acrochordons in 19 (29.23%) (Figure 1).

Among the 65 patients who presented with dermatological manifestations, 60% ( $n = 39$ ) exhibited coinfection with multiple skin conditions. Notably, 25

patients (26.88%) had two distinct dermatoses, while eight (8.60%) and six (6.45%) had three and four, respectively (Figure 2).

Further analysis revealed a correlation between the BMI and number of skin conditions per patient. Obese individuals showed a higher propensity for multiple dermatoses, culminating in a 32.8-fold increased risk of four or more skin manifestations in morbidly obese patients (Table 2). To explore the associations between BMI and the number of skin conditions per patient more comprehensively, we performed a multivariate analysis using logistic regression models. This approach allowed us to independently assess the impact of BMI, while controlling for potential confounders. We considered demographic variables, such as age and sex, in addition to other relevant clinical factors.

### IV. DISCUSSION

Our study population predominantly consisted of women (66%), of which 68% had systemic arterial hypertension. Age, sex, diabetes, and hypertension did not emerge as significant risk factors for skin alterations among patients with MS. This finding diverges from certain studies suggesting that certain dermatoses exhibit age-specific preferences and correlations with MS [32].

Among our diabetic population, 68.09% had skin alterations and 31.91% did not. This suggests no significant relationship between diabetes and dermatological manifestations, in contrast to a study conducted at a University Hospital in Ribeirão Preto, where a high incidence (81%) of skin lesions in diabetic patients was observed [33]. Other studies also reported a higher frequency of dermatological lesions in patients with diabetes, particularly those with decompensation [32].

Our data revealed a strong association between the BMI and dermatological alterations. Our findings regarding the robust association between BMI and dermatological alterations align with and complement the existing literature. Recent systematic reviews and meta-analyses have investigated the link between MS and skin diseases, providing valuable insights into the intricate relationship between metabolic factors and dermatological conditions.

Sodagar et al. [34] conducted a comprehensive systematic review and meta-analysis that emphasized the association between MS and prevalent skin diseases. These findings contribute to a growing body of evidence supporting the link between metabolic factors and dermatological alterations.

A prospective cross-sectional study by Aryanian et al. [35] delved into the high incidence of MS components in patients with lichen planus, shedding light on the specific dermatological manifestations

associated with metabolic disturbances. Furthermore, an investigation of the global prevalence of MS in patients with psoriasis over the past two decades offers insights into the evolving landscape of these associations [36].

A systematic review and meta-analysis by Ying et al. [37], specifically focusing on the risk of MS in patients with lichen planus, further enriched our understanding of the complex interplay between dermatological and metabolic health. By acknowledging and citing these studies, we aimed to contextualize our findings within the broader literature, reinforcing the significance of the observed association between BMI and dermatological alterations.

None of the MS patients with a BMI <18.5 experienced skin conditions, while the percentages with dermatoses progressively increased across higher BMI categories: 42.86% (18.5–24.9), 72% (25–29.9), 67.57% (30–34.9), and 71.43% (35–39.9). All patients with a BMI >40 had dermatological alterations, suggesting the strong influence of obesity. This association was statistically significant, with morbidly obese patients (BMI >40) demonstrating a 32.8-fold higher risk of having four or more dermatoses than the other groups.

Obesity emerged as a key determinant of the dermatological manifestations in this study. None of the healthy participants exhibited any skin alterations. Among those with ideal weight, less than half developed dermatological alterations. The prevalence of skin changes increased steadily with increasing BMI categories: >50% in both overweight and grade 1–2 obese individuals and 100% in patients with grade 3 obesity.

The three most frequent skin conditions, presented in descending order, were pseudo-acanthosis nigricans (50.77%), androgenetic alopecia (33.8%), and acrochordons (29.23%). Furthermore, 60% of the individuals showed co-occurrence of multiple skin manifestations.

While the multifaceted functions of the skin and their potential correlation with dermatological alterations in MS are well documented, the underlying mechanisms remain incompletely understood and require further investigation [16, 31]. This underscores the importance of healthcare professionals remaining vigilant for dermatological manifestations as potential indicators of MS, thereby contributing to the prevention of future cardiovascular and dermatological complications [32, 38].

This study had certain limitations. First, the sample size was relatively small, which may have affected the generalizability of the findings to a broader population. The cross-sectional nature of the study design implies inherent limitations, including the inability to establish causality and susceptibility to bias owing to the lack of longitudinal follow-up. Furthermore, it is important to recognize the potential selection bias.

Finally, owing to the specific nature of our cohort, generalizing the results to different demographic and geographic contexts is limited. These limitations should be considered when interpreting the findings of this study.

Although existing research suggests a link between skin changes and MS, robust data and comprehensive studies examining this relationship are limited. Filling this knowledge gap by conducting in-depth research will contribute significantly to a more comprehensive understanding of the overall profile and societal impact of this connection.

In conclusion, our study revealed a high prevalence of dermatological manifestations, particularly pseudo-acanthosis nigricans, in individuals with MS. Additionally, we observed a higher incidence of MS in women, individuals with systemic arterial hypertension, and individuals with morbid obesity. Morbid obesity has emerged as a strong risk factor for skin alterations. These findings highlight the importance of healthcare professionals being attentive to dermatological presentations as potential indicators of MS. Early identification and proactive management of MS can help prevent or mitigate long-term complications, including those affecting the cardiovascular and skin systems. Beyond the aforementioned areas, future investigations could benefit from exploring new frontiers at the interface between MS and dermatology. Understanding the molecular mechanisms underlying the skin alterations associated with MS may pave the way for more targeted therapies and specific prevention strategies. Innovative approaches, such as studies on the skin microbiome in individuals with MS, may reveal the connections between metabolic health and skin microbiota composition. Furthermore, considering the emerging role of artificial intelligence in medicine, the application of advanced machine learning techniques can provide more refined insights into dermatological patterns associated with MS. By pursuing these directions, future research can not only expand our knowledge, but also catalyze practical advancements in the clinical approach to MS and its dermatological implications.

## V. STATEMENTS AND DECLARATIONS

### a) *Competing Interests and Funding*

The authors state no conflict of interest. This study was supported by the Universidade de Gurupi. The funder had no role in the study design; in the collection, analysis or interpretation of data; in the writing of the report; and in the decision to submit the article for publication.

### b) *Data Availability Statement*

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.



c) *Consent to Participate*

Informed consent was obtained from all individual participants included in the study.

d) *Ethics Approval*

Authorization was provided by the Municipal Health Department. The Research Ethics Committee of University of Gurupi (opinion number: 4.880.322) approved this research.

*Author Contributions*

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## ACKNOWLEDGEMENTS

We would like to acknowledge Editage (<https://www.editage.com/>) for English language editing.

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## TABLES

*Table 1:* Demographic and clinical characteristics of the study group with metabolic syndrome-related to dermatological alterations in patients treated at the Basic Health Units of Gurupi-TO, Brazil (2022)

	n. Total	% Total	Dermatological alteration (Yes)		Dermatological alteration (No)		$\chi^2$	p-value
			n.	%	n.	%		
Age range in years	>40	18.28%	15	88.24%	2	11.76%	3.33	0.07
	40-60	52.69%	34	69.39%	15	30.61%	0.01	0.91
	>60	19.35%	11	61.11%	7	38.89%	0.82	0.37
Sex	Male	29.03%	22	78.57%	6	21.43%	1.12	0.29
	Female	70.97%	44	67.69%	21	32.31%		
Diabetes	Yes	50.54%	32	68.09%	15	31.91%	0.15	0.70
	No	49.46%	33	71.74%	13	28.26%		
Hypertension	Yes	73.12%	45	66.18%	23	33.82%	1.66	0.20
	No	26.88%	20	80.00%	5	20.00%		
BMI	<18.5	1.08%	0	0.00%	1	100%	2.35	0.12
	18.5-24.9	7.53%	3	42.86%	4	57.14%	2.63	0.10
	25-29.9	26.88%	18	72.00%	7	28.00%	0.07	0.79
	30-34.9	40.22%	25	67.57%	12	32.43%	0.28	0.59
	35-39.9	15.05%	10	71.43%	4	28.57%	0.02	0.90
>40	9.68%	9	100.0%	0	0.00%	4.29	0.04	
Waist circumference (cm). ♀: >88 cm, ♂: >102 cm	Yes	84.95%	58	73.42%	21	26.58%	3.10	0.08
	No	15.05%	7	50.00%	7	50.00%		

BMI: Body Mass Index; %: percentage; >: Higher than; <: Lower than; n: Number;  $\chi^2$ : Chi-squared; p: Level of significance; ♀: Female; ♂: Male

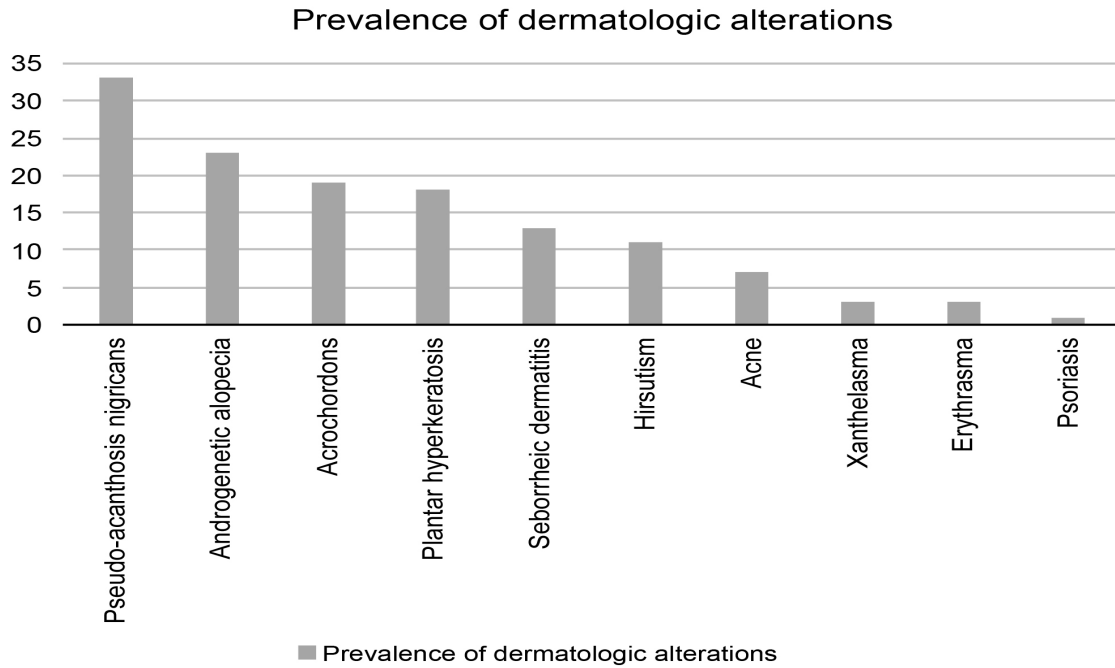
Table 2: Correlation between the number of dermatoses and BMI in the study group with metabolic syndrome

No. of Dermatoses	BMI	n.	%	OR	CI	$\chi^2$	p
One	<18.5	0	0	-	-	0.35	0.553
	18.5-24.9	3	12.05%	0.45	0.23-9.23	0.89	0.900
	25-29.9	9	37.50%	1.99	0.73-5.39	1.85	0.173
	30-34.9	6	25.00%	0.40	0.14-1.12	3.12	0.077
	35-39.9	3	12.50%	0.75	0.19-2.97	0.16	0.685
	>40	3	12.50%	1.50	0.34-6.53	0.29	0.587
Two	>18.5	0	0	-	-	0.79	0.987
	18.5-24.9	0	0	-	-	2.78	0.096
	25-29.9	5	20.00%	0.60	0.20-1.82	0.82	0.364
	30-34.9	16	64.00%	3.89	1.48-10.23	8.07	0.004
	35-39.9	2	8.00%	0.41	0.08-1.96	1.33	0.249
	>40	2	8.00%	0.76	0.14-3.92	0.11	0.740
Three	>18.5	0	0	-	-	0.37	0.542
	18.5-24.9	0	0	-	-	0.71	0.399
	25-29.9	3	37.50%	0.70	0.23-1.82	0.86	0.964
	30-34.9	1	12.50%	0.19	0.02-1.62	2.79	0.094
	35-39.9	4	50.00%	7.50	1.61-34.81	8.35	0.0038
	>40	0	0	-	-	0.93	0.333

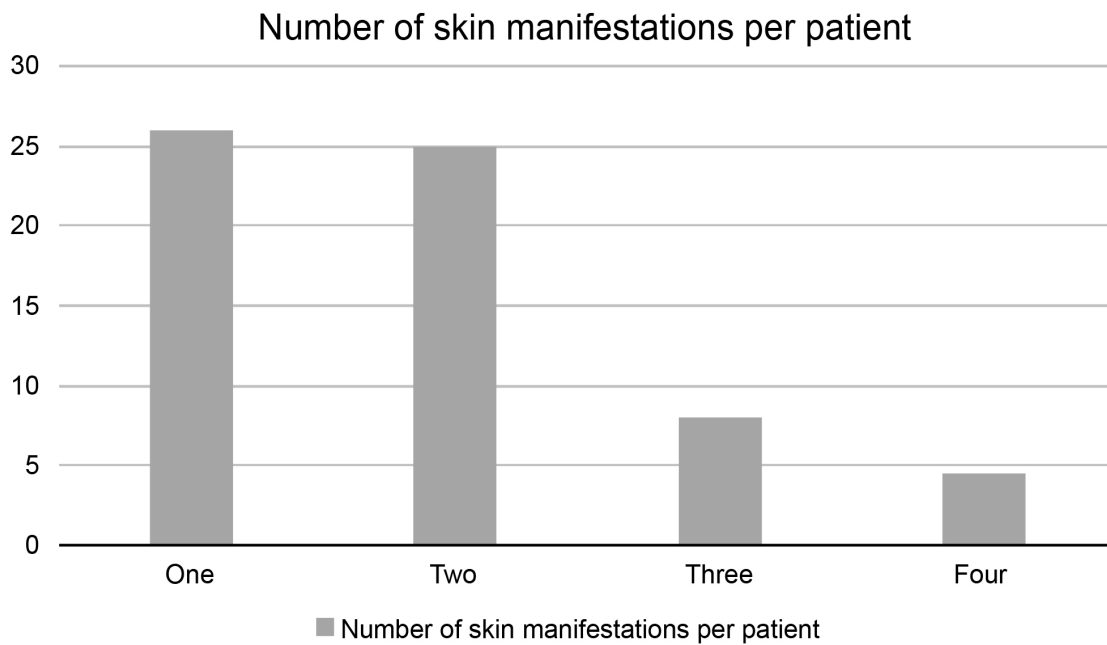
<b>Four</b>	>18.5	0	0	-	-	0.07	0.792
	18.5–24.9	0	0	-	-	0.52	0.470
	25–29.9	0	0	-	-	2.36	0.125
	30–34.9	2	33.33%	0.73	0.13–4.20	0.13	0.722
	35–39.9	0	0	-	-	1.14	0.286
	<b>&gt;40</b>	<b>4</b>	<b>66.67%</b>	<b>32.80</b>	<b>4.79–224.31</b>	<b>23.83</b>	<b>0.000001</b>

BMI: Body Mass Index; %: percentage; >: Higher than; <: Lower than; n: Number;  $\chi^2$ : Chi-squared; p: Level of significance; OR: Odds ratio; CI: Confidence interval

## FIGURE LEGENDS



*Figure 1:* Prevalence of dermatological alterations in the study group with metabolic syndrome in patients treated at the Basic Health Units of Gurupi-TO, Brazil (2022)



*Figure 2:* Number of skin manifestations per patient in the MS Study Group in patients treated at the Basic Health Units of Gurupi-TO, Brazil (2022)

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GLOBAL JOURNAL OF HUMAN-SOCIAL SCIENCE: H  
INTERDISCIPLINARY  
Volume 24 Issue 6 Version 1.0 Year 2024  
Type: Double Blind Peer Reviewed International Research Journal  
Publisher: Global Journals  
Online ISSN: 2249-460X & Print ISSN: 0975-587X

## Eco Tourism and Sustainable Development in North Bengal: An Ethnographic Study of Jhandi Village in Gorubathan, Dooars Region

By Dr. Ashlesha Rai

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**Abstract-** Eco tourism is one of the fastest growing markets in tourism industry. It is not only a process of travelling to destinations where flora and fauna, cultural heritage are the primary attractions but it is also about preserving the place that inherently benefits the environment and local population of that particular place. It is ideal for environmental management and protection. Jhandi a small village in Gorubathan, Dooars region is one of the most attractive tourists' destination and highest peak of Gorubathan with optimum climate ambience. The serenity and beauty of the village along with the tremendous natural resources, like water resources, agricultural resources, soil resources, mineral resources, forest resources and wild life resources has been perfect place for the people and it has an immense impact on attracting the eco tourist from different places. The village has not only succeeded in promoting eco tourism in the region but have tremendously affected the development of the village and the locals as a whole.

**Keywords:** *eco tourism, sustainable development, north bengal, jhandi village.*

**GJHSS-H Classification:** *LCC: G156.5.E26, GF75*



*Strictly as per the compliance and regulations of:*



# Eco Tourism and Sustainable Development in North Bengal: An Ethnographic Study of Jhandi Village in Gorubathan, Dooars Region

Dr. Ashlesha Rai

**Abstract-** Eco tourism is one of the fastest growing markets in tourism industry. It is not only a process of travelling to destinations where flora and fauna, cultural heritage are the primary attractions but it is also about preserving the place that inherently benefits the environment and local population of that particular place. It is ideal for environmental management and protection. Jhandi a small village in Gorubathan, Dooars region is one of the most attractive tourists' destination and highest peak of Gorubathan with optimum climate ambience. The serenity and beauty of the village along with the tremendous natural resources, like water resources, agricultural resources, soil resources, mineral resources, forest resources and wild life resources has been perfect place for the people and it has an immense impact on attracting the eco tourist from different places. The village has not only succeeded in promoting eco tourism in the region but have tremendously affected the development of the village and the locals as a whole. Of these issues of significance, the study has conducted an exploratory research to analyse the current scenario or development of eco tourism/ village tourism in Jhandi village. It will also attempt to explore the tourism practices and sustainable development in the village and highlight the future prospects and possibilities that can be executed for the implementation of eco tourism in a larger scale.

**Keywords:** eco tourism, sustainable development, north bengal, jhandi village.

## I. INTRODUCTION

The concept of tourism emerged in late 1960's and 1970s for the concern of inappropriate use of natural resources (Tran and Do Quynh, 2011). The approach has been taken to minimize the depletion and effects on natural environment and to enhance the protection of natural resources. According to United Nations World Tourism Organization, eco tourism is nature based form of tourism in which the main motivation of the tourists is the observation and appreciation of nature as well as the traditional cultures prevailing in natural areas (Valtonen, 2013). However in broader outlook, eco tourism is a form of tourism that fosters learning experiences and appreciation of the natural environment and some component thereof, within its associated cultural context and to attain socio-culturally sustainable outcomes as well as financial viability (Tran and Do Quynh, 2011). Moreover, it has been suggested that ecotourism does not necessarily

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need to be based on purely natural or undisturbed area but it can be focused on observing a single element in a small scale ecosystem, for example, a certain species of flora or fauna (Valtonen, 2013).

Eco tourism has been extensively labelled into nature based, adventure based, wild life, cultural based and food based tourism and so on. It is not only a process of travelling to destinations where flora and fauna, cultural heritage are the primary attractions but it is also about preserving the place that inherently benefits the environment and local population of that particular place. At local level, ecotourism is aimed to ensure long term inclusive development through the genuine participation of its stakeholders (Chan and Bhatta, 2013). It is portrayed as smaller in size and scale, but the major concern is not on the dimension and extent of ecotourism but how it is planned, implemented and managed to contribute to economic, social and cultural development of the local communities related to destination.

It helps in community development by providing the alternate source of livelihood to local community, which is more sustainable (Kiper, 2013). As such tourism in rural areas entails the opportunity to back sustainable development by highlighting not only the economic aspect but the socio-cultural dimension as well (Gronau and Kaufmann, 2009). Carefully planned and operated ecotourism sites, especially if it is village-based and includes local participation, is able to provide direct benefits that might offset pressure from other less sustainable activities that make use of natural and cultural resources. (Kiper, 2013).

With the above backdrop, the present study has made an attempt to bring into attention the narrative analysis of the development of eco tourism in Jhandi Village, Gorubathan which has received little academic attention despite being a potential eco hotspot in North Bengal. It will further explore the tourism practices and its impact on the socio-economic status of the villagers, endorsing both sustainability and development in the region.

### *Jhandi Village*

Jhandi is a small hamlet in Gorubathan, Dooars region that lies in the lap of northern part, North Bengal and it is popularly known by Jhandi Eco Huts and continues to become the most attractive tourist

destination from past ten years. It is one of the highest peaks in Gorubathan with optimum climatic ambiance situated on 6,200 ft. above sea level. The serenity and beauty of the village along with the tremendous natural resources has been perfect place for the people and it has an immense impact on attracting eco tourists from different places. Surrounded by attractive natural landscape and endowed with natural flora and fauna, this place is the nearest and reachable hill top from plain land of West Bengal.

## II. METHODOLOGY

The study is primarily based on ethnographic research, collected using both purposive and snowball sampling techniques. Primary data has been collected purposively from the selected location. Snowball sampling has been used as; it helps to locate the desired respondents required for the study through the referrals of initial respondents. On the other hand secondary data was collected through different journals, articles, newspapers and internet sources. A semi-structured questionnaire has been conducted with four people, the manager of Jhandi eco huts, the owner of home stays and around 17 local people of the village. In order to ensure confidentiality and emphasize the voluntary nature of the interview all potential respondents was asked for prior appointments to ensure their convenience and was given the choice of opting out of the interview.

## III. JHANDI ECO HUTS: THE STORY BEHIND

Jhandi is a small village where tourism and agriculture is the principle source of economy and earnings of the people. Prior with the introduction of eco tourism in the village, the earnings of the people were dependent on agriculture and farming. Jhandi Eco Huts was started by Dr. P.D Bhutia in September 2011 with the construction of beautiful eco huts which he initially named as 'Lava Escape'. So in 2013 when Rajen Pradhan took property in hand, he changed the name into Jhandi Eco Huts. The name has its own significance and meaning attached. The word 'Dara' in Nepali means a hill and the word 'Jhandi' originates from the word Jhanda or Flag. So, generally people in villages used to put religious flag on top of the hill nearby<sup>1</sup>. As Jhandi is a top hill village lies in the vicinity of Gorubathan, Dooars Region, thus the name Jhandi Eco Huts. The reason behind changing the label is to upgrade the business for marketing purpose, which was degrading by that time period and to attract tourist for exploring the sublime beauty of the village more so, of the hill top. The hill top provides tourists with the enchanting view of Kanchenjunga, Teesta River, Sunrise and Sunset Dooars, Night View Kalimpong and Nathula Mountain

Ranges. Also as narrated by the villagers, prior to becoming the popular tourist destination, Jhandidara was also known as 'Nayak Dara' which was named after a Nayak or Subedar<sup>2</sup> who used to stay in the village. So Jhandi Eco Huts not only attract people for the pleasant views or to enjoy the tranquillity of nature but such stories narration by the local villagers make it more fascinating for tourist to explore and enjoy their stay in Jhandi Eco Huts.

### a) Present Scenario of Eco Tourism in the Village

Jhandi Eco Huts have altogether four eco huts with ten rooms providing best accommodation and basic facilities. The area is surrounded by forever lush green tea gardens, vegetables, colourful wild flowers and forest. In Jhandi Eco Huts, the minimum tariffs start from Rs. 1500 to Rs 4000 depending on cottage type and number of occupancy. Each hut is labelled with Nepali indices, which is a manifestation of the local specifics available in Jhandi Village. For instance, *Laliguras Eco Hut* (Rhododendron flower), *Geet Khola Eco Hut* (Name of river in Jhandi), *Gauthali Eco Hut* (Name of the Bird) etc. Thus, each eco hut is with not only the purpose to accommodate people but it is also an attempt to allow people to recognize the natural significance of the village.

The major initiative taken by Jhandi Eco Hut is not only to attract tourist from different places but to promote local food, provide organic experiences, exploring village lifestyle, support local business and bolster employment opportunities in the village which has lead to a sustainable livelihood development in Jhandi village. Following the narration of Rajen Pradhan, *"previously the rate of cow milk was Rs 25 per litre. But he told his staff to increase the rate to Rs 35 per litre and whatever the extra profit they used to get, they make it a point to share it with the villagers. This is one small step towards integrating community people along with us."*

Subsequently, the rise of tourist in Jhandi Eco Huts has profound impact on the construction of home stays and small restaurants by the locals in the vicinity areas. Presently, a total of eight to nine home stays are available in the village. In terms of topography, Jhandi Eco Huts is built in the highest hill top of the village. So tourist prefers their stay more than into other homestays. But what make it different are their cooperation and support among them and the local people. One of the home stay owner stated, *"People usually come to stay in Eco Huts and explore the place but whenever they cannot accommodate people, they send it to our homestays and we make sure to give them the equal comfort and hospitality in our place."*

Different categories of tourist hail from different places, predominantly from Kolkata, Cooachbehar, Alidurpur and Siliguri. Presently, a significant number

<sup>1</sup> <https://www.north-bengal.com/jhandi-dara-kalimpong.html>

<sup>2</sup> Subedar is a rank of junior commissioned officer in Indian Army.

Photographers and Bird Watcher has also been visiting the place along with some foreign tourists, who are interested in hiking, trekking or just experiencing the peaceful and traditional life of village. One of the Jhandi Eco Hut staff speaks, *'The inflow of tourist has been very impressive during the last three years. In fact, more than 1,200 tourists have visited the village during this year from various parts of West Bengal predominantly from Kolkata.'* Not only tourists but lately the locals from nearby places frequently visit Jhandi to hanging out with their friends and families. The season for visits starts from the month of October till the month of May. But as per the staffs and people of Jhandi, the flow of the tourist has been declining lately, due to the uphill rough road condition. But despite such difficulty, eco tourism in this region is still flourishing, thereby becoming one of the major Eco Tourism hotspot in Gorubathan, Dooars Region. It has no doubt contributed towards the sustainable livelihood of the people in diverse ways which has been illustrated below.

b) *Changes after Implementation of Eco Tourism*

The implementation of Eco Tourism has brought some developmental changes in Jhandi village.

*Creating Opportunities for People:* After Eco Tourism has been implemented in the village, job opportunities for the local people especially the youths who were unemployed and are interested to work in Jhandi Eco Huts were appointed in various departments as a manager, staff, caterer, etc. Gradually, career options were diversified as trainers, tourist guides and trekkers. The narration of 25 years old staff from Jhandi Eco Huts, *"I have failed my Class 10 Madhyamik Examination so I was ideally sitting at home doing nothing. So Jhandi Eco Hut needed some staffs. So I joined them and after one year I saved my money for my education. I reapplied for examination and I got through. I am continuing my education but during weekends and holidays, I come here to work."*

Creating job for the rural youth has given them the opportunity to earn whilst saving for their higher education, which needed more attention. Another 45 years old respondent from the village stated, *"It is no doubt that our village has changed a lot after tourism has been introduced. If you ask, there are people who have generated income via local business, opening shops, building home stays that somehow contributed towards improving education of children and youths. Earlier, families who could not support financially for children's higher education has now started sending them to colleges and universities."* Thus the above two narrations shows the relevant effect of tourism not only on economic capital but it has also enhanced the cultural capital of people in terms of attaining higher educational qualifications.

*Promotion of Local Business:* Eco tourism has catered towards employing local people as well as it opened a new trajectory for those people who wanted to promote or start local businesses in the village. Even though people are not exclusively involved in tourism industry, they are benefitted by promoting/ selling local foods, organic vegetables, flowers, fruits, handicrafts etc. Moreover, it has been observed that, villagers no more go to the local market to sell their goods. All the goods get supplied locally to those who are involved in home stays and business activities, thus reducing the transportation of carrying charges as well. A 36 year lady who owns a small fast food restaurant on the way to Jhandi Eco Huts narrated, *"After tourist started coming to this place, I thought of opening a fast food zone but was sceptical whether they might come to eat. Gradually people started to come in my restaurant and enjoy the food. I usually serve Nepali food like momos, thukpa, aludam, chowmein etc. During tourist season, earnings are good and I am able to support my family."*

Following the above narrations, a 38 years old man speaks, *"I am a farmer and I cultivate almost very cash crops and seasonal vegetables in my field. So, these days it is very difficult to procure organic vegetables and fruits. So whenever people from nearby places come to visit Jhandi, they buy it from me. I do not have an actual shop but I made small hut nearby my home to sell my vegetables. I also supply them outside my village. I cannot say, I am earning a lot but it helped me support my family."* Thus the above two narrations illustrate the circuitous effect of tourism in the village, which has contributed towards improving the economic afflictions of the villagers.

*Overall Development of Village:* The fundamental change eco tourism has brought in this village is the improvement in transport facilities, water management and availability of electricity. Initially roadways were not there. There was a Kuccha (unrepaired) road and it was not in a good condition. On the other hand, the vital problem people have to deal was the shortage of water. People have to carry water from nearby streams and provide in eco huts and home stays. After the functioning of Eco Tourism, there has been an improvement in all these sectors. Constructions of small roads are also taking place within the village through rural development schemes which has significantly benefitted the villagers as well as the tourists who want to explore the place. There is no doubt that, Jhandi eco huts has been an attraction for the tourists which helped in implementing new rural projects for the development of the village. It has successfully rejuvenated the mundane life of the villagers and people are gratified with the changes that they have witnessed after introducing Eco Tourism in the Village.

c) *Cultural Exchange and Awareness among the People*

Eco Tourism has no doubt led to socio-economic changes as well as cultivated an individual capacity building among the people. As most of the tourist come from different places and speak different languages, there were difficulties in verbal communication or in interpreting any valuable information by the locals. Thus over a period of time, there has been an improvement among people, particularly among those who are directly or indirectly associated with tourism business, by learning and communicating in languages like Hindi, English and Bengali, which according to them was necessary for the development of their businesses. On the other hand, it also offers tourist the opportunity to engage with local people and experience their way of life. A lot of people residing in this area are simple-minded and their daily activities revolve around the natural environment. But the development of eco tourism in this region and the everyday interaction new people has somehow made them aware of the preservation of nature and has been consciously taking initiative for the sustainable development of the village. One intentional effort made by the villagers was to minimise the use of plastic and impose restriction on littering garbage or plastics in the village. It is one of the steps to promote an eco friendly tourism in the village.

d) *Experiences Shared by Tourists*

Far away from the hustle bustle of city life, coming to village and enjoy the natural beauty painted with myriad culture and traditions in itself was a unique experience for tourist in Jhandi Eco Huts. A couple from Kolkata who has been staying in Jhandi Eco Huts for two days has narrated a unique incident, *"One thing we notice in this village is that, people do not lock their homes whenever they go out. There is no use of lock and key in the house, which means that villagers here are like family, so loyal and trustworthy. The harmony we see in villages cannot be found in city life. It was something I learned and experience from here."* Sharing similar observation, a tourist from Coocbehar speaks, *"We really like the place, although coming to this high up terrain was a little difficult for us but we have enjoyed every moment here. The hospitality and care we get from people is what I love the most about this place. And I think this kind of warmth and love we get only from village people.* Thus it can be said that, the beauty of Jhandi lies not only on captivating beauty of nature but it is more than that. The harmonious nature and the warm hospitality these tourists had experienced is often overlooked rather it is a significant paradigm that can contribute or promote eco tourism in villages like Jhandi Village.

e) *Future Prospects of Eco Tourism in the Village*

Many developmental changes and proper infrastructure facilities need to be provided to boost up tourism sector in the village. Interviews with the respondents have highlighted some of the points that need to be introduced in future or should be taken into consideration for eco tourism to be flourished in Jhandi Village.

- a) Construction of pitch road in the village is a huge concern for the villagers, as it can affect the involvement of tourism in the village.
- b) Lately, some of the villagers have started selling their land to business entrepreneurs from other states who claim to build star hotels. Thus, the people who run home stays and eco huts express worryness, that their idea of creating a sustainable and eco friendly tourism business might affect in coming future.
- c) This village has a great potential to turn into a major exotic eco hotspot but for that people who wants to get involved in tourism sector should not only look upon this business as a financial venture but also should make genuine contributions to the conservation of natural environment and resources as well.
- d) Very little is known about this area or the village. So, to attract the local as well as foreign tourists, the networking or the advertisement should be in large scale in every possible way is necessary.
- e) Ecotourism in the village is totally self -funded. In this case, if the Government or even tourism department should extend their support in some way or other the ecotourism in the village would definitely flourish in future.

#### IV. CONCLUSION

Eco Tourism has played a significant role in providing sustainable livelihood for the people thereby becoming an alternative source of income generation in Jhandi village. It has not only generated employment opportunities for rural youths but it was successful in integrating local businesses or marketing local products that has led to a community empowerment. The frequent interaction and assimilation with tourists from different regions has enhanced the social, cultural and educational values of the villagers. They had learned to preserve and utilize natural and cultural resources in a sustainable way as to enable the economic development of the village. It can thus be argued that, with proper organisational strategies and publicity, ecotourism with its rich natural endowments can do a lot for the good of the rural economy and society.

## ACKNOWLEDGMENTS

The author is grateful to all the respondents from Jhandi Village, Dooars Region of North Bengal who have given their sheer support in collecting data for the research.

### *Declaration of Conflicting Interest*

The author (s) declares no potential conflicts of interest concerning the research authorship and/ or publication of this article.

### *Funding*

The author(s) received no financial support for the research, authorship and/ or publication of this article.

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Figures are supposed to be submitted as separate files. Always include a citation in the text for each figure using Arabic numbers, e.g., Fig. 4. Artwork must be submitted online in vector electronic form or by emailing it.

## PREPARATION OF ELETRONIC FIGURES FOR PUBLICATION

Although low-quality images are sufficient for review purposes, print publication requires high-quality images to prevent the final product being blurred or fuzzy. Submit (possibly by e-mail) EPS (line art) or TIFF (halftone/ photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Avoid using pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings). Please give the data for figures in black and white or submit a Color Work Agreement form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution at final image size ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs): >350 dpi; figures containing both halftone and line images: >650 dpi.

Color charges: Authors are advised to pay the full cost for the reproduction of their color artwork. Hence, please note that if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a Color Work Agreement form before your paper can be published. Also, you can email your editor to remove the color fee after acceptance of the paper.

## TIPS FOR WRITING A GOOD QUALITY SOCIAL SCIENCE RESEARCH PAPER

Techniques for writing a good quality homan social science research paper:

**1. Choosing the topic:** In most cases, the topic is selected by the interests of the author, but it can also be suggested by the guides. You can have several topics, and then judge which you are most comfortable with. This may be done by asking several questions of yourself, like "Will I be able to carry out a search in this area? Will I find all necessary resources to accomplish the search? Will I be able to find all information in this field area?" If the answer to this type of question is "yes," then you ought to choose that topic. In most cases, you may have to conduct surveys and visit several places. Also, you might have to do a lot of work to find all the rises and falls of the various data on that subject. Sometimes, detailed information plays a vital role, instead of short information. Evaluators are human: The first thing to remember is that evaluators are also human beings. They are not only meant for rejecting a paper. They are here to evaluate your paper. So present your best aspect.

**2. Think like evaluators:** If you are in confusion or getting demotivated because your paper may not be accepted by the evaluators, then think, and try to evaluate your paper like an evaluator. Try to understand what an evaluator wants in your research paper, and you will automatically have your answer. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

**3. Ask your guides:** If you are having any difficulty with your research, then do not hesitate to share your difficulty with your guide (if you have one). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work, then ask your supervisor to help you with an alternative. He or she might also provide you with a list of essential readings.

**4. Use of computer is recommended:** As you are doing research in the field of homan social science then this point is quite obvious. Use right software: Always use good quality software packages. If you are not capable of judging good software, then you can lose the quality of your paper unknowingly. There are various programs available to help you which you can get through the internet.

**5. Use the internet for help:** An excellent start for your paper is using Google. It is a wondrous search engine, where you can have your doubts resolved. You may also read some answers for the frequent question of how to write your research paper or find a model research paper. You can download books from the internet. If you have all the required books, place importance on reading, selecting, and analyzing the specified information. Then sketch out your research paper. Use big pictures: You may use encyclopedias like Wikipedia to get pictures with the best resolution. At Global Journals, you should strictly follow [here](#).



**6. Bookmarks are useful:** When you read any book or magazine, you generally use bookmarks, right? It is a good habit which helps to not lose your continuity. You should always use bookmarks while searching on the internet also, which will make your search easier.

**7. Revise what you wrote:** When you write anything, always read it, summarize it, and then finalize it.

**8. Make every effort:** Make every effort to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in the introduction—what is the need for a particular research paper. Polish your work with good writing skills and always give an evaluator what he wants. Make backups: When you are going to do any important thing like making a research paper, you should always have backup copies of it either on your computer or on paper. This protects you from losing any portion of your important data.

**9. Produce good diagrams of your own:** Always try to include good charts or diagrams in your paper to improve quality. Using several unnecessary diagrams will degrade the quality of your paper by creating a hodgepodge. So always try to include diagrams which were made by you to improve the readability of your paper. Use of direct quotes: When you do research relevant to literature, history, or current affairs, then use of quotes becomes essential, but if the study is relevant to science, use of quotes is not preferable.

**10. Use proper verb tense:** Use proper verb tenses in your paper. Use past tense to present those events that have happened. Use present tense to indicate events that are going on. Use future tense to indicate events that will happen in the future. Use of wrong tenses will confuse the evaluator. Avoid sentences that are incomplete.

**11. Pick a good study spot:** Always try to pick a spot for your research which is quiet. Not every spot is good for studying.

**12. Know what you know:** Always try to know what you know by making objectives, otherwise you will be confused and unable to achieve your target.

**13. Use good grammar:** Always use good grammar and words that will have a positive impact on the evaluator; use of good vocabulary does not mean using tough words which the evaluator has to find in a dictionary. Do not fragment sentences. Eliminate one-word sentences. Do not ever use a big word when a smaller one would suffice.

Verbs have to be in agreement with their subjects. In a research paper, do not start sentences with conjunctions or finish them with prepositions. When writing formally, it is advisable to never split an infinitive because someone will (wrongly) complain. Avoid clichés like a disease. Always shun irritating alliteration. Use language which is simple and straightforward. Put together a neat summary.

**14. Arrangement of information:** Each section of the main body should start with an opening sentence, and there should be a changeover at the end of the section. Give only valid and powerful arguments for your topic. You may also maintain your arguments with records.

**15. Never start at the last minute:** Always allow enough time for research work. Leaving everything to the last minute will degrade your paper and spoil your work.

**16. Multitasking in research is not good:** Doing several things at the same time is a bad habit in the case of research activity. Research is an area where everything has a particular time slot. Divide your research work into parts, and do a particular part in a particular time slot.

**17. Never copy others' work:** Never copy others' work and give it your name because if the evaluator has seen it anywhere, you will be in trouble. Take proper rest and food: No matter how many hours you spend on your research activity, if you are not taking care of your health, then all your efforts will have been in vain. For quality research, take proper rest and food.

**18. Go to seminars:** Attend seminars if the topic is relevant to your research area. Utilize all your resources.

Refresh your mind after intervals: Try to give your mind a rest by listening to soft music or sleeping in intervals. This will also improve your memory. Acquire colleagues: Always try to acquire colleagues. No matter how sharp you are, if you acquire colleagues, they can give you ideas which will be helpful to your research.

**19. Think technically:** Always think technically. If anything happens, search for its reasons, benefits, and demerits. Think and then print: When you go to print your paper, check that tables are not split, headings are not detached from their descriptions, and page sequence is maintained.



**20. Adding unnecessary information:** Do not add unnecessary information like "I have used MS Excel to draw graphs." Irrelevant and inappropriate material is superfluous. Foreign terminology and phrases are not apropos. One should never take a broad view. Analogy is like feathers on a snake. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Never oversimplify: When adding material to your research paper, never go for oversimplification; this will definitely irritate the evaluator. Be specific. Never use rhythmic redundancies. Contractions shouldn't be used in a research paper. Comparisons are as terrible as clichés. Give up ampersands, abbreviations, and so on. Remove commas that are not necessary. Parenthetical words should be between brackets or commas. Understatement is always the best way to put forward earth-shaking thoughts. Give a detailed literary review.

**21. Report concluded results:** Use concluded results. From raw data, filter the results, and then conclude your studies based on measurements and observations taken. An appropriate number of decimal places should be used. Parenthetical remarks are prohibited here. Proofread carefully at the final stage. At the end, give an outline to your arguments. Spot perspectives of further study of the subject. Justify your conclusion at the bottom sufficiently, which will probably include examples.

**22. Upon conclusion:** Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium through which your research is going to be in print for the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects of your research.

## INFORMAL GUIDELINES OF RESEARCH PAPER WRITING

### **Key points to remember:**

- Submit all work in its final form.
- Write your paper in the form which is presented in the guidelines using the template.
- Please note the criteria peer reviewers will use for grading the final paper.

### **Final points:**

One purpose of organizing a research paper is to let people interpret your efforts selectively. The journal requires the following sections, submitted in the order listed, with each section starting on a new page:

*The introduction:* This will be compiled from reference matter and reflect the design processes or outline of basis that directed you to make a study. As you carry out the process of study, the method and process section will be constructed like that. The results segment will show related statistics in nearly sequential order and direct reviewers to similar intellectual paths throughout the data that you gathered to carry out your study.

### **The discussion section:**

This will provide understanding of the data and projections as to the implications of the results. The use of good quality references throughout the paper will give the effort trustworthiness by representing an alertness to prior workings.

Writing a research paper is not an easy job, no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record-keeping are the only means to make straightforward progression.

### **General style:**

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

**To make a paper clear:** Adhere to recommended page limits.



### *Mistakes to avoid:*

- Insertion of a title at the foot of a page with subsequent text on the next page.
- Separating a table, chart, or figure—confine each to a single page.
- Submitting a manuscript with pages out of sequence.
- In every section of your document, use standard writing style, including articles ("a" and "the").
- Keep paying attention to the topic of the paper.
- Use paragraphs to split each significant point (excluding the abstract).
- Align the primary line of each section.
- Present your points in sound order.
- Use present tense to report well-accepted matters.
- Use past tense to describe specific results.
- Do not use familiar wording; don't address the reviewer directly. Don't use slang or superlatives.
- Avoid use of extra pictures—include only those figures essential to presenting results.

### **Title page:**

Choose a revealing title. It should be short and include the name(s) and address(es) of all authors. It should not have acronyms or abbreviations or exceed two printed lines.

**Abstract:** This summary should be two hundred words or less. It should clearly and briefly explain the key findings reported in the manuscript and must have precise statistics. It should not have acronyms or abbreviations. It should be logical in itself. Do not cite references at this point.

An abstract is a brief, distinct paragraph summary of finished work or work in development. In a minute or less, a reviewer can be taught the foundation behind the study, common approaches to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Use comprehensive sentences, and do not sacrifice readability for brevity; you can maintain it succinctly by phrasing sentences so that they provide more than a lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study with the subsequent elements in any summary. Try to limit the initial two items to no more than one line each.

*Reason for writing the article—theory, overall issue, purpose.*

- Fundamental goal.
- To-the-point depiction of the research.
- Consequences, including definite statistics—if the consequences are quantitative in nature, account for this; results of any numerical analysis should be reported. Significant conclusions or questions that emerge from the research.

### **Approach:**

- Single section and succinct.
- An outline of the job done is always written in past tense.
- Concentrate on shortening results—limit background information to a verdict or two.
- Exact spelling, clarity of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else.

### **Introduction:**

The introduction should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable of comprehending and calculating the purpose of your study without having to refer to other works. The basis for the study should be offered. Give the most important references, but avoid making a comprehensive appraisal of the topic. Describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will give no attention to your results. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here.





*The following approach can create a valuable beginning:*

- Explain the value (significance) of the study.
- Defend the model—why did you employ this particular system or method? What is its compensation? Remark upon its appropriateness from an abstract point of view as well as pointing out sensible reasons for using it.
- Present a justification. State your particular theory(-ies) or aim(s), and describe the logic that led you to choose them.
- Briefly explain the study's tentative purpose and how it meets the declared objectives.

#### **Approach:**

Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done. Sort out your thoughts; manufacture one key point for every section. If you make the four points listed above, you will need at least four paragraphs. Present surrounding information only when it is necessary to support a situation. The reviewer does not desire to read everything you know about a topic. Shape the theory specifically—do not take a broad view.

As always, give awareness to spelling, simplicity, and correctness of sentences and phrases.

#### **Procedures (methods and materials):**

This part is supposed to be the easiest to carve if you have good skills. A soundly written procedures segment allows a capable scientist to replicate your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order, but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt to give the least amount of information that would permit another capable scientist to replicate your outcome, but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section.

When a technique is used that has been well-described in another section, mention the specific item describing the way, but draw the basic principle while stating the situation. The purpose is to show all particular resources and broad procedures so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step-by-step report of the whole thing you did, nor is a methods section a set of orders.

#### **Materials:**

*Materials may be reported in part of a section or else they may be recognized along with your measures.*

#### **Methods:**

- Report the method and not the particulars of each process that engaged the same methodology.
- Describe the method entirely.
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures.
- Simplify—detail how procedures were completed, not how they were performed on a particular day.
- If well-known procedures were used, account for the procedure by name, possibly with a reference, and that's all.

#### **Approach:**

It is embarrassing to use vigorous voice when documenting methods without using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result, when writing up the methods, most authors use third person passive voice.

Use standard style in this and every other part of the paper—avoid familiar lists, and use full sentences.

#### **What to keep away from:**

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings—save it for the argument.
- Leave out information that is immaterial to a third party.



**Results:**

The principle of a results segment is to present and demonstrate your conclusion. Create this part as entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Use statistics and tables, if suitable, to present consequences most efficiently.

You must clearly differentiate material which would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matters should not be submitted at all except if requested by the instructor.

**Content:**

- Sum up your conclusions in text and demonstrate them, if suitable, with figures and tables.
- In the manuscript, explain each of your consequences, and point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation of an exacting study.
- Explain results of control experiments and give remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or manuscript.

**What to stay away from:**

- Do not discuss or infer your outcome, report surrounding information, or try to explain anything.
- Do not include raw data or intermediate calculations in a research manuscript.
- Do not present similar data more than once.
- A manuscript should complement any figures or tables, not duplicate information.
- Never confuse figures with tables—there is a difference.

**Approach:**

As always, use past tense when you submit your results, and put the whole thing in a reasonable order.

Put figures and tables, appropriately numbered, in order at the end of the report.

If you desire, you may place your figures and tables properly within the text of your results section.

**Figures and tables:**

If you put figures and tables at the end of some details, make certain that they are visibly distinguished from any attached appendix materials, such as raw facts. Whatever the position, each table must be titled, numbered one after the other, and include a heading. All figures and tables must be divided from the text.

**Discussion:**

The discussion is expected to be the trickiest segment to write. A lot of papers submitted to the journal are discarded based on problems with the discussion. There is no rule for how long an argument should be.

Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implications of the study. The purpose here is to offer an understanding of your results and support all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of results should be fully described.

Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact, you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved the prospect, and let it drop at that. Make a decision as to whether each premise is supported or discarded or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."



Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work.

- You may propose future guidelines, such as how an experiment might be personalized to accomplish a new idea.
- Give details of all of your remarks as much as possible, focusing on mechanisms.
- Make a decision as to whether the tentative design sufficiently addressed the theory and whether or not it was correctly restricted. Try to present substitute explanations if they are sensible alternatives.
- One piece of research will not counter an overall question, so maintain the large picture in mind. Where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

**Approach:**

When you refer to information, differentiate data generated by your own studies from other available information. Present work done by specific persons (including you) in past tense.

Describe generally acknowledged facts and main beliefs in present tense.

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	A-B	C-D	E-F
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<i>Introduction</i>	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
<i>Methods and Procedures</i>	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
<i>Result</i>	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
<i>Discussion</i>	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
<i>References</i>	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring



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ISSN 975587

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