

DAFTAR PUSTAKA

- Kondisi Geografis*. (2010, June 1). Dipetik April 2014, 24, dari Pemerintah Jogja: <http://www.pemda-diy.go.id/>
- Adeyeye, O. O. (2012). Five-year audit of spirometry at the LASUTH, Ikeja, south-west Nigeria. *African Journal of Respiratory Medicine*, 15-17.
- Arestegui, A. H. (2011). High Altitude Renal Syndrome (HARS). *Journal of The American Society of Nephrology*, 1963-1968.
- Brashier, B. B., & Kodgule, R. (2012). Risk Factors and Pathophysiology of Chronic Obstructive Pulmonary Disease (COPD). *Journal of The Association Physicians India*.
- Chandra, B. (2008). *Metedologi Penelitian Kesehatan*. Jakarta: EGC.
- Cogo, A. (2011, Februari 28). The Lung at High Altitude. *Multidisciplinary Respiratory Medicine*, hal. 14-15.
- Davenport, P. D. (2010, October 25). *Frontiers in Respiratory Physiology*. *Frontiers in Physiology*.
- Decramer, M. (2013). Contribution of Four Common Pulmonary Function Tests to Diagnosis of Patients with Respiratory Symptoms: A Prospective Cohort Study. *The Lancet Respiratory Medicine*, 705-713.
- Dhar, P. (2014). Autonomic Cardiovascular Responses in Acclimatized Lowlanders on Prolonged Stay at High Altitude: A Longitudinal Follow Up Study.
- Duong, M. (2013). Global Differences in Lung Function by Region (PURE): An International, Community-Based Prospective Study. *The Lancet Respiratory Medicine*, Volume 1, Issue 8, 599-609.
- Faramoushi, M., Bolboli, L., & Valizadeh, A. (2012). The Effect of Altitude on Lung Function of Male Athletes. *Annals of Biology Research*, 313-321.
- Fiori, G. (2000). Lung volume, chest size, and hematological variation in low-, medium-, and high-altitude central Asian populations. *American Journal of Physical Anthropology*, 47-59.
- Ganong, W. F. (2002). *Fisiologi Kedokteran*. Jakarta: Penerbit Buku Kedokteran EGC.
- Guyton, A. (2007). *Textbook of Medical Physiology*. Dalam Irawati, D. Ramadhani, F. Indriyani, F. Dany, I. Nuryanto, S. S. Rianti, et al., *Fisiologi Kedokteran* (Edisi 11 ed.). Jakarta: EGC.

- Hastuti, J. (2007). Ukuran dan bentuk dada penduduk di dataran tinggi Samigaluh dan dataran rendah Galur Kulon Progo Yogyakarta. *Jurnal Anatomi Indonesia*, 47-56.
- Himayanti, T. (2010). Variasi Mutasi Gen ATPase 6 Manusia pada Populasi Dataran Rendah. *Jurnal Sains dan Teknologi Kimia ISSN 2087-7412 Vol 1 No 1*, 80-87.
- Koegenlenberg, C. N. (2012). Guideline for office spirometry in adults. *The South African Medical Journal*, 52-61.
- Laniado, R. (2011). High Altitude and Chronic Obstructive Pulmonary Disease Prevalence: A Casual or Casual Correlation? *Archivos de Bronconeumologia*.
- Lew, K. (2010). *The Amazing Human Body Respiratory System*. Tarrytown: Marshal Cavendish Corporation.
- Madan. (2010). Spirometric Evaluation of Pulmonary Function Test in Bronchial Asthma Patients. *Journal of Exercise Science and Physiotherapy, Vol.6 No.2*, 106-111.
- Matthys, H. (2011). Fit for high altitude: are hypoxic challenge tests useful? *Multidisciplinary Respiratory Medicine journal*, 38-46.
- McArdle, W. D. (2006). *Essentials of Exercise Physiology*. Lippincott William & Wilkins.
- Moreno, A., & Ezpinoza-Navarro, O. (2013). COPD in Non-Smoking Elderly Men at Sea Level and High Atitide : Comparing Anthropomatic Characteristic and Physiological Responses. *International Journal Morphology*, 618-622.
- Nieman, D. C. (2004). *Kebugaran dan Kesehatan Anda*.
- Nugroho, W. (2000). *Keperawatan Gerontik*. Jakarta: EGC.
- Obeidat, M. (2011). A Comprehensive Evaluation of Potential Lung Function Associated Genes in the SpiroMeta General Population Sample.
- Papandrinopoulou, D. (2012, September 21). Lung Compliance and Chronic Obstructive Pulmonary Disease.
- Pasley, J. N. (2006). *Usmle Road Map Physiology*. Philadelphia: McGraw-Hill.
- Petousi, N. (2013). Tibetans living at sea level have a hyporesponsive hypoxia-inducible factor system and blunted physiological responses to hypoxia. *Journal of Applied Physiology*, 875-884.

- Piergiuseppe Agostoni, E. R. (2011). High Altitude Exposure of Three Weeks Duration Increases Lung Diffusing Capacity in Human. *J Appl Physiol*, 1564 - 1571.
- Purba, J. (2002). *Pengelolaan Lingkungan Sosial Kantor Menteri Negara Lingkungan Hidup*. Jakarta: Yayasan Obor Indonesia.
- Ranu, H. (2011). Pulmonary Function Test. *Ulster Medical Journal*, 84-90.
- Rhoades, R. A. (2013). Respiratory Physiology. Dalam D. R. Bell, *Medical Physiology Principal for Clinical Medicine* (hal. 326-382). Philadelphia: Lippincott Williams & Wilkins.
- Rifa'i, A. (2013). Aplikasi Sensor Tekanan Gas MPX5100 Dalam Alat Ukur Kapasitas Vital Paru-Paru. *Unnes Physic Journal*.
- Roh, H., & Lee, D. (2014). Respiratory Function of University Students Living at High Altitude. *J. Phys. Ther. Sci*, 1489-1492.
- Ruppel, G. L. (2012). Pulmonary Function Testing. *Respiratory Care Journal*, 165-175.
- Salome, C. M. (2010). Physiology of obesity and Effects on Lung Function. *Journal of Applied Physiology*, 206-211.
- Seccombe, L. M., & Peters, M. J. (2014). Physiology in Medicine: Acute altitude exposure in patients with pulmonary and cardiovascular disease. *Journal of Applied Physiology*, 478-485.
- Setiawan. (2008). *Wawasan Sosial 1*. Jakarta: Pusat Perbukuan Departemen Pendidikan Nasional.
- Sherwood, L. (2011). Human Physiology : From Cell to System. Dalam B. U. Pendit, *Fisiologi Manusia dari Sel ke Sistem* (Edisi 6 ed., hal. 497-498). Jakarta: EGC.
- Simonson, T. S., & Powell, F. L. (2013). Less is more: blunted responses to hypoxia revealed in sea-level Tibetans. *Journal of Applied Physiology*, 711-712.
- Sudiana, I. K. (2013). Dampak Adaptasi Lingkungan terhadap Perubahan Fisiologis. *Seminar Nasional FMIPA UNDIKSHA III*.
- Swarjana, I. K. (2012). *Metedologi Penelitian Kesehatan Tuntunan Praktis Pembuatan Proposal Kesehatan*. Yogyakarta: Andi Offset.
- Syaifuddin. (2009). *Fisiologi Tubuh Manusia untuk Mahasiswa Keperawatan*. Jakarta: Salemba Medika.

- Townsend, M. C. (2011). Spirometry in the Occupational Health Setting. *JOEM volume 53 number 5*.
- Vedala, S. (2013). Differences in Pulmonary Function Test among the Athletic and Sedentary Population. *National Journal of Physiology, Pharmacy & Pharmacology*, 118-123.
- Venugopalan, P. (2014, Februari 4). *Emedicine Medscape*. Dipetik April 12, 2014, dari Medscape: <http://emedicine.medscape.com>
- Verma, S. K. (2013). Ambient Air Pollution And Impairment Of Lung Volumes And Capacities In Young Inhabitants Of Industrial Area Of Kanpur. *NJIRM*, 65-70.
- Weiss, S. T. (2010, January). Lung function and airway diseases. *Nature and Genetics America*, hal. 14-16.
- Wilson, L. M. (2005). Pathophysiology: Clinical Concepts of Disease Processes. Dalam S. A. Price, *Patofisiologi Konsep Klinis Proses - Proses Penyakit* (B. U. pendit, Penerj., edisi 6 ed., Vol. 2). Jakarta: EGC.

LAMPIRAN 1

INFORMED CONCENT

Yang bertanda tangan di bawah ini saya :

1. Nama :
2. Tempat, tanggal lahir :
3. Alamat :

Setelah saya mengetahui tentang tujuan, tatacara, dan manfaat penelitian “Hubungan Perbedaan Letak Geografis Tempat Tinggal terhadap FVC dan FEV₁”, yaitu

1. Persiapan yang dilakukan responden :
Tidak melakukan aktivitas berat sebelum pengukuran dilakukan
2. Prosedur pelaksanaan penelitian :
 - a. Mengisi Kuesioner
 - b. Mengisi Informed Concent
 - c. Melakukan pengukuran tinggi badan dan berat badan
 - d. Melakukan pengukuran lingkar dada
 - e. Melakukan pengukuran FVC dan FEV₁ menggunakan alat spirometri dinamis

Maka saya menyatakan bersedia berpartisipasi menjadi responden mengingat manfaatnya.

Yogyakarta,

Yang menyatakan

LAMPIRAN 2

Kuesioner Penelitian Siswa

Nama :

Kelas :

Alamat :

Tempat tanggal lahir :

Apakah anda merokok ? Ya/Tidak

Apakah anda memiliki penyakit keturunan ? sebutkan !

Apakah anda bersedia menjadi subyek penelitian ? Ya/Tidak

Ttd

LAMPIRAN 3

Descriptives

		Statistic	Std. Error	
TB	Mean	162.8333	.63520	
	95% Confidence Interval for Mean	Lower Bound	161.5623	
		Upper Bound	164.1044	
	5% Trimmed Mean	162.8704		
	Median	162.5000		
	Variance	24.209		
	Std. Deviation	4.92027		
	Minimum	150.00		
	Maximum	174.00		
	Range	24.00		
	Interquartile Range	6.00		
	Skewness	-.084	.309	
	Kurtosis	.323	.608	

Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
TB	.133	60	.010	.981	60	.487

a. Lilliefors Significance Correction

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Usia Dataran tinggi	30	100.0%	0	0.0%	30	100.0%
Usia Dataran rendah	30	100.0%	0	0.0%	30	100.0%

Descriptives

			Statistic	Std. Error
Usia Dataran tinggi	Mean		16.8333	.17343
	95% Confidence Interval for Mean	Lower Bound	16.4786	
		Upper Bound	17.1880	
	5% Trimmed Mean		16.7778	
	Median		17.0000	
	Variance		.902	
	Std. Deviation		.94989	
	Minimum		15.00	
	Maximum		20.00	
	Range		5.00	
	Interquartile Range		1.00	
	Skewness		1.130	.427
	Kurtosis		3.129	.833
	Usia Dataran rendah	Mean		16.1667
95% Confidence Interval for Mean		Lower Bound	15.8120	
		Upper Bound	16.5214	
5% Trimmed Mean			16.1296	
Median			16.0000	
Variance			.902	
Std. Deviation			.94989	
Minimum			15.00	
Maximum			18.00	
Range			3.00	
Interquartile Range			2.00	
Skewness			.421	.427
Kurtosis			-.623	.833

Case Processing Summary

		Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
FVC	dataran tinggi	30	100.0%	0	0.0%	30	100.0%
	dataran rendah	30	100.0%	0	0.0%	30	100.0%

Descriptives

Tempat Tinggal			Statistic	Std. Error	
FVC	dataran tinggi	Mean	2790.0000	128.61776	
		95% Confidence Interval for Mean	Lower Bound	2526.9471	
			Upper Bound	3053.0529	
		5% Trimmed Mean	2819.4444		
		Median	2900.0000		
		Variance	496275.862		
		Std. Deviation	704.46850		
		Minimum	1000.00		
		Maximum	4000.00		
		Range	3000.00		
		Interquartile Range	825.00		
		Skewness	-.766	.427	
		Kurtosis	.222	.833	
		dataran rendah	Mean	2681.6667	66.75927
			95% Confidence Interval for Mean	Lower Bound	2545.1286
	Upper Bound			2818.2047	
5% Trimmed Mean	2693.5185				
Median	2800.0000				
Variance	133704.023				
Std. Deviation	365.65561				
Minimum	1800.00				
Maximum	3400.00				
Range	1600.00				
Interquartile Range	375.00				
Skewness	-.889		.427		
Kurtosis	.904		.833		

Tests of Normality

Tempat Tinggal	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
FVC dataran tinggi	.137	30	.159	.948	30	.150
FVC dataran rendah	.220	30	.001	.905	30	.011

a. Lilliefors Significance Correction

Case Processing Summary

		Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
FEV1	dataran tinggi	30	100.0%	0	0.0%	30	100.0%
	dataran rendah	30	100.0%	0	0.0%	30	100.0%

Descriptives

Tempat Tinggal		Statistic		Std. Error	
FEV1	dataran tinggi	Mean		2533.3333	124.85240
		95% Confidence Interval for Mean	Lower Bound	2277.9815	
			Upper Bound	2788.6852	
		5% Trimmed Mean		2556.4815	
		Median		2600.0000	
		Variance		467643.678	
		Std. Deviation		683.84478	
		Minimum		900.00	
		Maximum		3700.00	
		Range		2800.00	
		Interquartile Range		750.00	
		Skewness		-.670	.427
		Kurtosis		-.064	.833
			dataran rendah	Mean	
95% Confidence Interval for Mean	Lower Bound			2174.9824	
	Upper Bound			2418.3509	
5% Trimmed Mean				2307.4074	
Median				2325.0000	
Variance				106195.402	
Std. Deviation				325.87636	
Minimum				1500.00	
Maximum				2900.00	
Range				1400.00	
Interquartile Range				425.00	
Skewness				-.613	.427
Kurtosis				.119	.833

Tests of Normality

Tempat Tinggal	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
FEV1 dataran tinggi	.137	30	.154	.952	30	.186
dataran rendah	.104	30	.200 [*]	.963	30	.379

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Descriptives

Tempat Tinggal		Statistic	Std. Error		
Rasio FEV1/FVC	dataran tinggi	Mean	.90383	.006841	
		95% Confidence Interval for Mean	Lower Bound	.88984	
			Upper Bound	.91783	
		5% Trimmed Mean	.90643		
		Median	.91050		
		Variance	.001		
		Std. Deviation	.037471		
		Minimum	.789		
		Maximum	.968		
		Range	.179		
		Interquartile Range	.044		
		Skewness	-1.204	.427	
		Kurtosis	2.126	.833	
		dataran rendah	Mean	Mean	.85743
95% Confidence Interval for Mean	Lower Bound			.83885	
	Upper Bound			.87602	
5% Trimmed Mean	.85863				
Median	.86100				
Variance	.002				
Std. Deviation	.049768				
Minimum	.724				
Maximum	.964				
Range	.240				
Interquartile Range	.073				
Skewness	-.462			.427	
Kurtosis	.584			.833	

Tests of Normality

Tempat Tinggal	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Rasio FEV1/FVC dataran tinggi	.146	30	.104	.924	30	.033
dataran rendah	.137	30	.157	.965	30	.406

a. Lilliefors Significance Correction

Ranks

Tempat Tinggal	N	Mean Rank	Sum of Ranks
FVC dataran tinggi	30	33.27	998.00
dataran rendah	30	27.73	832.00
Total	60		

Test Statistics^a

	FVC
Mann-Whitney U	367.000
Wilcoxon W	832.000
Z	-1.230
Asymp. Sig. (2-tailed)	.219

a. Grouping Variable: Tempat Tinggal

Group Statistics

Tempat Tinggal	N	Mean	Std. Deviation	Std. Error Mean
FEV1 dataran tinggi	30	2533.3333	683.84478	124.85240
dataran rendah	30	2296.6667	325.87636	59.49661

Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
FEV1 Equal variances assumed	11.944	.001	1.711	58	.092	236.66667	138.30390	-40.17867	513.51201
FEV1 Equal variances not assumed			1.711	41.525	.095	236.66667	138.30390	-42.53651	515.86984

Group Statistics

	Tempat Tinggal	N	Mean	Std. Deviation	Std. Error Mean
Rasio FEV1/FVC	dataran tinggi	30	.90383	.037471	.006841
	dataran rendah	30	.85743	.049768	.009086

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Rasio FEV1/FVC	Equal variances assumed	3.275	.076	4.080	58	.000	.046400	.011374	.023633	.069167
	Equal variances not assumed			4.080	53.883	.000	.046400	.011374	.023596	.069204