Graphic Network to diagnose results of Clean and Jerk lifting a function some of Dynamic variables, relative strength and BMI for female Olympic weightlifters

Khaled Ebada, Ibrahim Abdel Hady, and Mohammed El-Rouby

***Abstract*—** This study aims to determine the Dynamic variables affecting the results of Clean & Jerk lifting, relative Strength and rate of Body Mass Index (BMI) appropriate for female lifters the 2012 Summer Olympics in London. In addition, the creation of standard levels, as well as Graphic Network to diagnose results of Clean & Jerk lifting a function each of dynamic variables, relative Strength and BMI of female lifters. Applied to the study of a sample of 88 women lifters participate in competitions weightlifting competitions at the 2012 Summer Olympics in London, where the average age 25.61 ± 3.68 years and length 160.18 ± 6.27 cm, weight 67.04 ± 14.33 kg. Were analyzed video film, which was filmed for women lifters knowledge of the International weightlifting Federation of the Technical Committee during the Olympic Games of London 2012. The analysis of the film was shot with a camera with a speed of 25 cadre / s, video to analyze the best attempt to female lifters to determine the performance time phases Clean & Jerk using program Maxtraq on line Manual Version 5. 5, to calculate the dynamic variables to calculate the dynamic variables included time each phase of performance phases and mechanical work and mechanical power on both sides the bar and high weight of the body mass center and was calculating the relative Strength, BMI rate and Six Sigma Score. The researchers used SPSS program to calculate the mean standard deviation and coefficient of sprains. The results showed the most dynamic variables affecting Clean & Jerk lifting were determined relative Strength and BMI best suited for female lifters. In addition, creation of standard levels and Graphic Network to diagnose results of female lifters in different weights categories a function each of some of dynamic variables, relative Strength and BMI. These results must be taken into account by the coaches and female lifters for use in diagnosing results of Clean & Jerk lifting. In addition, guided by them as indicators of the selection process of female weightlifting national teams.

***Keywords*—** Dynamic variables, relative Strength and BMI, Clean &Jerk, female lifters, Olympic.

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I. Introduction

FEMALE Olympic weightlifting characterized techniques for clean & jerk by an increased barbell displacement from platform to an overhead position. Which is referred to as the performance phases as follows for Clean & Jerk (Pull Phase I - Pull Phase II - Squat- standing up clean – Jerk- stand up from jerk)[11], [14], [15], [23], [24].

Considers Olympic Games most important global sports event for player's different sports involved in it and characterized sport of weightlifting as sports that rely on competition according to different weights categories. There is correlation close between weight categories and the length body, which is a real indicator of high weight body's center. If our perception of their female lifters (FL) from the same weight category, but one of them longer than a second and characterized the length of trunk and extremities, therefore the technical movements which rely on mechanical levers movement show that female lifters longer-arm strength characterized crane distinct. Body Mass Index (BMI) and the relative strength gives us real and substantive perception strength female lifters. It is very important in the success of performance female lifters in weightlifting dynamic variables is the power and expressed by mechanical work effort in a given time where he increased the mechanical work and decrease time increases mechanical power [14], [15], [17], [19] [21], [22].

It has been note when selecting female lifters teams to represent omission of previous variables. Developed by researchers at standard levels to be a guide when selecting female lifters to reach high levels in Olympic. The researchers noted through its expertise in field of weightlifting, brief him on studies, scientific research references specialized weightlifting, within science researcher found that there is a dearth of research studies for determining the Graphic Network to diagnose results of Clean and Jerk lifting a function some of Dynamic variables, relative strength and BMI for female Olympic weightlifters. To evaluate the performance of Clean & Jerk for female lifters and coaches to use the standard guide them through planning and preparing weightlifting training programs.

This study aims to determine the Dynamic variables affecting the results of Clean & Jerk (C&J) lifting, relative strength (RS) and rate of BMI appropriate for female lifters

the 2012 Summer Olympics in London (SOL). In addition, the creation of standard levels, as well as Graphic Network to diagnose results of (C&J) lifting a function each of dynamic variables, (RS) and BMI of female lifters.

II. Methods

Applied to the study of a sample of 88 female lifters participate in competitions weightlifting at the 2012 (SOL), where the average age 25.61 ± 3.68 y and length 160.18 ± 6.27 cm, weight 67.04 ± 14.33 kg. Were analyzed video film, which was filmed for female lifters. The analysis of the film was shot with a camera with a speed of 25 cadre / s, using program Maxtraq on line Manual Version 5. 5, to calculate the dynamic variables (mechanical work and mechanical power) on both sides the bar and high weight of the body mass center, It was found dynamic variables to following model Figure 1.

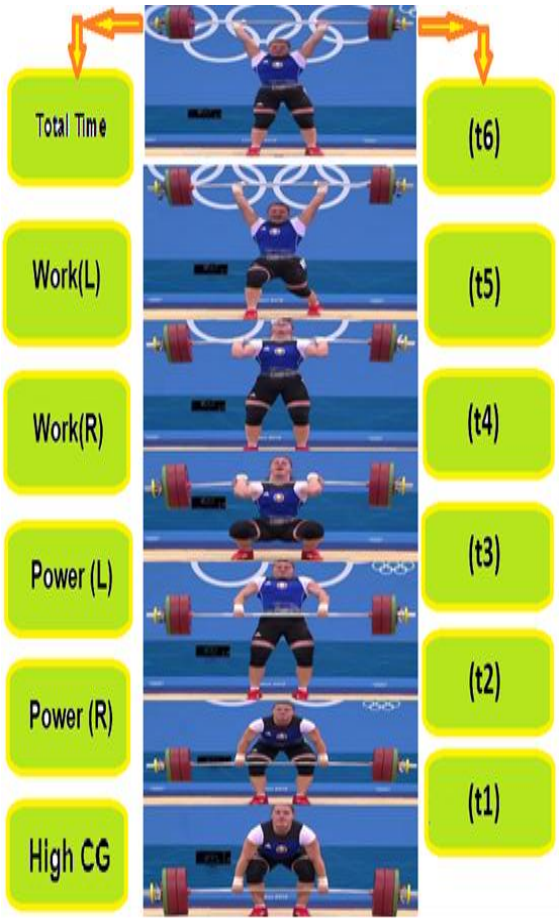

Fig. 1 Theoretical model for the dynamic variables for clean & jerk

Analyzed are Six main phases to Clean & Jerk a performance (Pull Phase I - Pull Phase II - Squat- standing up clean – Jerk- stand up from jerk) [2], [14], [15], [23], [24] [17]. Calculates of Performance time according to following formulas: Calculates of Performance time according to the following formulas have been specified time (t) for each phase of performance from the beginning to end of the phase to Clean & Jerk. Where the Pull phase I (t1), Pull phase II (t2), Squat (t3), Standing up clean (t4), Jerk (t5), Standing up from Jerk (t6), total time. Vertical Height right sides (HR) and left (HL) the mechanical work was calculated for the left (WL) and right (WR) side of the bar, by the following equation: WR = HR*F where (f) = raised weight /2*(9.8), WL = HL*F where (f) = raised weight /2*(9.8), Power = work done / time taken. It was the expense of high gravity center of the body According to Palmer Formula: 0.557 of body height + 1.4 cm measured from feet [2], [5], [20].

It was found the rate of body mass index (BMI) and relative strength (RS.) of female lifters where the ladies were calculated BMI by the following formula: BMI=Weight (kg)/(Length (m))2, and calculate the relative strength of the following formula: RS.= Maximum strength/Body weight [9], [13].

III. Statistical Analysis

SPSS statistics 21 was used to apply formulas statistical by calculating: Mean (M.), Standard Deviation (S.D), Percentile Score and formulas Six Sigma score [8]. Constant =3(S.D)/50.

IV. Results

The results showed the most dynamic variables affecting C&J lifting were determined (RS) and BMI best suited for female lifters. In addition, creation of standard levels and Graphic Network to diagnose results of female lifters in different weight categories a function each of some of dynamic variables, (RS) and BMI.

Show Table I, II Graphic network to diagnose results of clean and jerk lifting a function of dynamic variables, relative strength and BMI for female Olympic weightlifters in the different weight categories, and standard degree. Where showed Graphic network for female weightlifters in various weights categories the convergence in phase time Pull I, Pull II and Squat to lifts clean & jerk. while the back of a difference from the beginning of phase standup from clean to the end of performance progress and it depends on different body mass, the mass weight raised and female lifter strength [16].

The table I, II Shown superiority female lifters 58 kg category in the relative strength of the muscle group involved in dynamic performance of clean& jerk, which achieved RS. Clean & jerk average 2.14±0.14, while achieved female lifters 63 kg category average RS. Clean & jerk average 1.94±0.18 is explained, however, that results as female weightlifters depend on differing BMI and rate increase relative strength indicates the development of strength to muscle group involved in dynamic performance of clean & jerk for female weightlifting [4], [19].

Showed Graphic Network to female lifters of 48, 53, 58 kg weight categories higher than range between 0.05 - 0.47 kg. which is less than 0.50 kg of maximum weight category has attributed this increase to the percentage water or fat or waste products in the body female lifter, and which can disposed of which through different ways to lose weight with the aim of achieving best result of anticipated achievement [8].

TABLE I
GRAPHIC NETWORK FOR LENGTH, WEIGHT AND TIME PERFORMANCE PHASES OF CLEAN AND JERK LIFTING FOR FEMALE OLYMPIC WEIGHTLIFTERS

WC	Present%	B. weight	Length	Performance time Clean & jerk (Sec.)						Total T.
				Pull phase I	Pull phase II	Squat	Standing up clean	Jerk	Standing up from Jerk	
	100	48.23	160.29	0.34	0.21	0.41	2.44	1.21	2.03	8.21
	90	48.10	158.18	0.37	0.23	0.43	2.66	1.41	2.08	8.44
	80	47.97	156.06	0.41	0.25	0.45	2.87	1.60	2.13	8.67
	70	47.84	153.95	0.44	0.27	0.47	3.09	1.80	2.17	8.90
	60	47.71	151.84	0.47	0.29	0.49	3.30	2.00	2.22	9.13
48kg	50	47.59	149.73	0.51	0.31	0.51	3.52	2.20	2.26	9.36
	40	47.46	147.61	0.54	0.33	0.53	3.74	2.39	2.31	9.60
	30	47.33	145.50	0.57	0.35	0.55	3.95	2.59	2.36	9.83
	20	47.20	143.39	0.60	0.37	0.57	4.17	2.79	2.40	10.06
	10	47.07	141.28	0.64	0.40	0.59	4.38	2.98	2.45	10.29
	0	46.95	139.17	0.67	0.42	0.61	4.60	3.18	2.49	10.52
	100	53.05	183.62	0.26	0.23	0.37	1.13	2.84	1.56	8.01
	90	52.95	178.24	0.30	0.25	0.40	1.26	2.94	1.73	8.18
	80	52.85	172.87	0.35	0.27	0.42	1.39	3.03	1.91	8.34
	70	52.75	167.49	0.39	0.29	0.45	1.52	3.13	2.08	8.51
	60	52.65	162.11	0.44	0.30	0.48	1.66	3.22	2.26	8.68
53kg	50	52.55	156.73	0.48	0.32	0.51	1.79	3.32	2.43	8.85
	40	52.46	153.51	0.53	0.35	0.54	1.92	3.41	2.61	9.02
	30	52.36	150.28	0.57	0.38	0.56	2.06	3.51	2.78	9.19
	20	52.26	147.05	0.62	0.41	0.59	2.19	3.60	2.96	9.36
	10	52.16	143.83	0.67	0.44	0.62	2.32	3.69	3.13	9.53
	0	52.06	140.60	0.71	0.47	0.65	2.46	3.79	3.31	9.70
	100	58.47	169.38	0.43	0.25	0.54	1.40	1.63	1.96	6.87
	90	58.30	166.90	0.46	0.27	0.55	1.47	1.80	2.01	7.08
	80	58.14	164.43	0.50	0.28	0.56	1.53	1.96	2.06	7.30
	70	57.97	161.95	0.53	0.30	0.57	1.60	2.13	2.11	7.52
	60	57.81	159.48	0.57	0.32	0.59	1.66	2.30	2.16	7.74
58kg	50	57.65	157.00	0.61	0.34	0.60	1.73	2.47	2.21	7.96
	40	57.48	154.53	0.64	0.35	0.61	1.80	2.64	2.27	8.17
	30	57.32	152.05	0.68	0.37	0.62	1.86	2.81	2.32	8.39
	20	57.15	149.58	0.71	0.39	0.64	1.93	2.98	2.37	8.61
	10	56.99	147.10	0.75	0.41	0.65	1.99	3.15	2.42	8.83
	0	56.82	144.63	0.78	0.43	0.66	2.06	3.32	2.47	9.05
	100	65.38	172.00	0.51	0.29	0.33	1.56	1.85	2.95	8.27
	90	64.63	170.00	0.55	0.29	0.37	1.71	2.08	3.00	8.63
	80	63.88	168.00	0.59	0.30	0.41	1.87	2.31	3.04	8.99
	70	63.12	166.00	0.63	0.31	0.45	2.02	2.55	3.08	9.35
	60	62.37	164.00	0.67	0.32	0.48	2.18	2.78	3.12	9.71
63kg	50	61.62	162.00	0.71	0.33	0.52	2.33	3.01	3.17	10.07
	40	60.87	160.00	0.76	0.33	0.56	2.48	3.24	3.21	10.43
	30	60.11	158.00	0.80	0.34	0.59	2.64	3.47	3.25	10.78
	20	59.36	156.00	0.84	0.35	0.63	2.79	3.71	3.29	11.14
	10	58.61	154.00	0.88	0.36	0.67	2.95	3.94	3.34	11.50
	0	57.86	152.00	0.92	0.37	0.71	3.10	4.17	3.38	11.86
	100	69.31	169.60	0.40	0.32	0.38	2.12	2.30	2.95	9.35
	90	69.13	168.01	0.47	0.34	0.42	2.21	2.60	3.22	9.97
	80	68.96	166.41	0.55	0.36	0.47	2.29	2.91	3.48	10.59
	70	68.78	164.81	0.62	0.38	0.51	2.37	3.22	3.75	11.20
	60	68.61	163.21	0.69	0.40	0.56	2.45	3.52	4.02	11.82
69kg	50	68.43	161.62	0.77	0.42	0.60	2.54	3.83	4.28	12.44
	40	68.25	160.02	0.84	0.43	0.65	2.62	4.14	4.55	13.05
	30	68.08	158.42	0.92	0.45	0.69	2.70	4.44	4.81	13.67
	20	67.90	156.82	0.99	0.47	0.74	2.79	4.75	5.08	14.29
	10	67.73	155.22	1.07	0.49	0.78	2.87	5.06	5.34	14.90
	0	67.55	153.63	1.14	0.51	0.83	2.95	5.36	5.61	15.52
	100	76.42	173.63	0.40	0.18	0.57	1.11	3.04	1.97	8.22
	90	75.97	171.82	0.45	0.19	0.58	1.21	3.09	2.11	8.40
	80	75.52	170.01	0.49	0.21	0.60	1.30	3.14	2.25	8.57
	70	75.08	168.20	0.54	0.22	0.62	1.40	3.18	2.39	8.74
	60	74.63	166.39	0.59	0.24	0.64	1.50	3.23	2.53	8.91
75kg	50	74.18	164.58	0.64	0.26	0.66	1.59	3.28	2.66	9.08
	40	73.73	162.78	0.68	0.27	0.68	1.69	3.33	2.80	9.26
	30	73.28	160.97	0.73	0.29	0.69	1.79	3.37	2.94	9.43
	20	72.84	159.16	0.78	0.30	0.71	1.88	3.42	3.08	9.60
	10	72.39	157.35	0.83	0.32	0.73	1.98	3.47	3.22	9.77
	0	71.94	155.54	0.87	0.34	0.75	2.08	3.51	3.35	9.94
	100	161.21	185.50	0.45	0.29	0.47	1.27	2.34	1.94	8.02
	90	151.15	182.60	0.51	0.30	0.50	1.44	2.72	2.00	8.49
	80	141.10	179.70	0.58	0.31	0.53	1.61	3.11	2.06	8.96
	70	131.04	176.80	0.65	0.33	0.56	1.79	3.49	2.12	9.44
	60	120.98	173.90	0.72	0.34	0.58	1.96	3.88	2.18	9.91
+75kg	50	110.92	171.00	0.79	0.35	0.61	2.13	4.26	2.24	10.39
	40	100.86	168.10	0.85	0.36	0.64	2.31	4.65	2.30	10.86
	30	90.80	165.20	0.92	0.37	0.67	2.48	5.03	2.36	11.34
	20	80.74	162.30	0.99	0.39	0.70	2.65	5.42	2.42	11.81
	10	70.68	159.40	1.06	0.40	0.73	2.83	5.80	2.48	12.28
	0	60.62	156.50	1.13	0.41	0.75	3.00	6.19	2.55	12.76

TABLE II
GRAPHIC NETWORK TO DIAGNOSE RESULTS OF CLEAN AND JERK LIFTING A FUNCTION OF DYNAMIC VARIABLES, RELATIVE STRENGTH AND BMI FOR FEMALE OLYMPIC WEIGHTLIFTERS

WC.	Present%	B. weight	BMI	RS.	Dynamic variables					C&J
					WL	WR	Power L	Power R	CG.	
	100	48.23	24.20	2.67	10.65575	10.96442	1.21282	1.240023	93.41925	126.26
	90	48.10	23.62	2.56	10.22841	10.51517	1.152834	1.178831	91.69502	121.06
	80	47.97	23.03	2.45	9.801079	10.06592	1.092849	1.117639	89.97079	115.86
	70	47.84	22.45	2.33	9.373745	9.616667	1.032863	1.056447	88.24655	110.67
	60	47.71	21.87	2.22	8.946411	9.167415	0.972878	0.995255	86.52232	105.47
48 kg	50	47.59	21.29	2.11	8.519077	8.718163	0.912892	0.934064	84.79809	100.27
	40	47.46	20.71	2.00	8.091743	8.268911	0.852907	0.872872	83.07386	95.08
	30	47.33	20.13	1.88	7.664409	7.81966	0.792921	0.81168	81.34963	89.88
	20	47.20	19.55	1.77	7.237075	7.370408	0.732935	0.750488	79.6254	84.68
	10	47.07	18.97	1.66	6.809741	6.921156	0.67295	0.689296	77.90116	79.49
	0	46.95	18.38	1.54	6.382407	6.471904	0.612964	0.628104	76.17693	74.29
	100	53.05	25.55	2.53	13.04422	13.26831	1.421421	1.448201	93.11911	133.04
	90	52.95	24.76	2.44	12.33868	12.53878	1.351882	1.375675	91.95317	128.27
	80	52.85	23.96	2.35	11.63314	11.80924	1.282342	1.303148	90.78723	123.50
	70	52.75	23.17	2.26	10.9276	11.07971	1.212803	1.230622	89.62129	118.74
	60	52.65	22.38	2.17	10.22207	10.35018	1.143263	1.158095	88.45534	113.97
53kg	50	52.55	21.59	2.08	9.516527	9.62065	1.073724	1.085569	87.2894	109.20
	40	52.46	20.80	1.99	8.810988	8.891118	1.004184	1.013042	86.12346	104.43
	30	52.36	20.01	1.90	8.10545	8.161586	0.934644	0.940516	84.95751	99.66
	20	52.26	19.21	1.81	7.399911	7.432054	0.865105	0.867989	83.79157	94.90
	10	52.16	18.42	1.72	6.694372	6.702523	0.795565	0.795463	82.62563	90.13
	0	52.06	17.63	1.63	5.988833	5.972991	0.726026	0.722936	81.45969	85.36
	100	58.47	27.05	2.57	13.57637	13.67494	1.808738	1.809674	97.0579	147.98
	90	58.30	26.33	2.49	13.08114	13.17988	1.72688	1.730068	95.41612	143.06
	80	58.14	25.61	2.40	12.58591	12.68482	1.645022	1.650462	93.77434	138.14
	70	57.97	24.89	2.31	12.09068	12.18976	1.563163	1.570855	92.13256	133.22
	60	57.81	24.17	2.23	11.59545	11.69469	1.481305	1.491249	90.49078	128.30
58kg	50	57.65	23.45	2.14	11.10022	11.19963	1.399446	1.411643	88.849	123.38
	40	57.48	22.73	2.05	10.60499	10.70457	1.317588	1.332036	87.20722	118.45
	30	57.32	22.01	1.97	10.10976	10.20951	1.23573	1.25243	85.56544	113.53
	20	57.15	21.29	1.88	9.614534	9.71445	1.153871	1.172824	83.92366	108.61
	10	56.99	20.57	1.79	9.119304	9.219389	1.072013	1.093217	82.28188	103.69
	0	56.82	19.85	1.71	8.624074	8.724328	0.990154	1.013611	80.6401	98.77
	100	65.38	25.73	2.48	16.74236	16.95768	1.78964	1.812837	98.82124	159.67
	90	64.63	25.28	2.37	15.68835	15.87777	1.661298	1.681573	97.38379	151.71
	80	63.88	24.84	2.26	14.63434	14.79785	1.532956	1.550309	95.94635	143.76
	70	63.12	24.39	2.16	13.58032	13.71794	1.404614	1.419045	94.5089	135.80
	60	62.37	23.95	2.05	12.52631	12.63803	1.276272	1.287781	93.07145	127.84
63kg	50	61.62	23.50	1.94	11.4723	11.55811	1.14793	1.156517	91.634	119.89
	40	60.87	23.06	1.83	10.41829	10.4782	1.019589	1.025253	90.19655	111.93
	30	60.11	22.61	1.73	9.364278	9.398285	0.891247	0.893989	88.7591	103.98
	20	59.36	22.17	1.62	8.310267	8.318372	0.762905	0.762726	87.32165	96.02
	10	58.61	21.72	1.51	7.256255	7.238458	0.634563	0.631462	85.88421	88.07
	0	57.86	21.28	1.41	6.202243	6.158544	0.506221	0.500198	84.44676	80.11
	100	69.31	28.77	2.36	15.9616	16.22262	1.451894	1.478048	96.72759	161.69
	90	69.13	28.27	2.27	15.22793	15.47552	1.361219	1.385319	95.66603	155.40
	80	68.96	27.76	2.18	14.49427	14.72843	1.270545	1.292589	94.60446	149.10
	70	68.78	27.25	2.08	13.76061	13.98134	1.17987	1.19986	93.5429	142.81
	60	68.61	26.74	1.99	13.02694	13.23425	1.089196	1.107131	92.48133	136.52
69kg	50	68.43	26.23	1.90	12.29328	12.48715	0.998522	1.014402	91.41977	130.23
	40	68.25	25.72	1.81	11.55961	11.74006	0.907847	0.921673	90.3582	123.94
	30	68.08	25.21	1.72	10.82595	10.99297	0.817173	0.828943	89.29664	117.65
	20	67.90	24.70	1.63	10.09228	10.24588	0.726498	0.736214	88.23507	111.36
	10	67.73	24.19	1.54	9.35862	9.498786	0.635824	0.643485	87.17351	105.07
	0	67.55	23.68	1.45	8.624956	8.751694	0.54515	0.550756	86.11195	98.78
	100	76.42	30.28	2.42	19.94793	20.22755	2.245832	2.275437	100.795	180.83
	90	75.97	29.71	2.29	18.45989	18.7009	2.072486	2.098082	99.25062	170.83
	80	75.52	29.15	2.16	16.97186	17.17424	1.899139	1.920726	97.70619	160.83
	70	75.08	28.58	2.03	15.48382	15.64759	1.725793	1.743371	96.16177	150.83
	60	74.63	28.01	1.90	13.99579	14.12093	1.552446	1.566015	94.61734	140.83
75kg	50	74.18	27.44	1.76	12.50775	12.59428	1.3791	1.38866	93.07292	130.83
	40	73.73	26.87	1.63	11.01972	11.06762	1.205753	1.211304	91.52849	120.83
	30	73.28	26.30	1.50	9.53168	9.540968	1.032407	1.033949	89.98407	110.83
	20	72.84	25.74	1.37	8.043644	8.014313	0.85906	0.856594	88.43964	100.83
	10	72.39	25.17	1.24	6.555609	6.487658	0.685714	0.679238	86.89521	90.83
	0	71.94	24.60	1.11	5.067573	4.961003	0.512368	0.501883	85.35079	80.83
	100	161.21	51.82	1.96	22.49306	22.60857	2.163981	2.165036	107.0702	205.00
	90	151.15	49.02	1.84	20.89912	20.99423	2.011553	2.012564	104.9856	193.65
	80	141.10	46.22	1.72	19.30518	19.37988	1.859124	1.860091	102.9009	182.30
	70	131.04	43.43	1.60	17.71124	17.76554	1.706696	1.707619	100.8163	170.95
	60	120.98	40.63	1.48	16.11729	16.1512	1.554267	1.555147	98.73164	159.60
+75kg	50	110.92	37.83	1.36	14.52335	14.53685	1.401839	1.402675	96.647	148.25
	40	100.86	35.04	1.25	12.92941	12.92251	1.249411	1.250203	94.56236	136.90
	30	90.80	32.24	1.13	11.33546	11.30817	1.096982	1.097731	92.47771	125.55
	20	80.74	29.44	1.01	9.741522	9.693825	0.944554	0.945259	90.39307	114.20
	10	70.68	26.65	0.89	8.147579	8.079482	0.792125	0.792787	88.30842	102.85
	0	60.62	23.85	0.77	6.553636	6.465139	0.639697	0.640315	86.22378	91.50

V. Discussion

The results showed that of performance time of pull phase II is less than a performance time pull phase I in clean& jerk for female lifters [10], [17]. Where short duration pull phase II indicates that I have the power female lifters much bigger than it was in the pull phase I, That is where the power = work/ time P=W/T [3], [5], [6], [18], [20]. Results indicate the greater the relative strength of female lifter, the lower performance time phases of the lifting [1], [11]. The researchers attributed the low performance in a time the pull phase II for the pull phase I to that pull phase II begin of placing movement, while start pull phase I of stability. As that female lifter after double-phase bending the knees be in a better mechanic put, where resistance to shorten the arm less as possible addition to the involvement of different muscle groups, arms, legs and trunk at work synchronously which increases the net force [4], [11]. Attributed researchers low time of pull phase I and of pull phase II, which is an indicator to increase the strength and power female lifters to control weight for the time of each squat phase and stand up heavyweight to pull female lifter [2], [12]. The weight of the barbell with all of its strength even to overcome the weight, force of gravity to lift the barbell and so increase the speed barbell [8], [18].

As shown by a Graphic Network the convergence in the level of the relative strength of the muscles involved in Kinetic performance, as well as lifting of performance time total of the lift, which should be characterized by female weightlifters. Appeared this difference in the level of strength to female lifters different BMI. A researchers sees that the female lifters and trainers should develop the maximum muscle strength in their training programs [2]. As shown by a Graphic Network to diagnose to female lifters 63, 69 kg category that there is a convergence in the levels of standard Dynamic variables, RS, BMI, and performance time of female lifters [6], [7], [12].

Show results Graphic Network to diagnose the average Dynamic variables, (RS) and BMI results lifts C&J for female weightlifters, and the degree to standard interview 100% [12], the best values that can up to it female weightlifters at the moment. Where showed Graphic Network to diagnose for female weightlifters in various weight categories the convergence in phase time to lifts C&J. As shown by a Graphic Network to diagnose the convergence in the level of the (RS) of the muscles involved in Dynamic performance, as well as lifting of performance time total of the lift, which should be characterized by female weightlifters. This has not been achieved female lifters participate in Olympics London 2012. Appeared this difference in the level of strength to female lifters different Dynamic rates. A researchers sees that female lifters and trainers should develop the maximum muscle strength in their training programs [2], and the use of standard levels of Graphic Network to diagnose best suited to female weightlifters, When evaluate the level of performance and results female lifters. The use of it when the selection female lifters national teams to participate championships and the Olympic Games. [12], [13].

VI. Conclusion

The results showed the Graphic network to diagnose results of clean and jerk lifting a function of dynamic variables, relative strength and BMI for female Olympic weightlifters in the different weight categories and determine the standard to assess the performance of Clean & Jerk in weightlifting. These results must be taken into account by the coaches and female lifters for use in diagnosing results of Clean & Jerk lifting. In addition, guided by them as indicators of the selection process of female weightlifting national teams.

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