

*

(×)
()

()

(180)

(0.492)

.(0.066)

.1

.(2003)

- -)
- -
(

*

2006/5/18

.2006/11/27

(Kilani, 2000) (1998) (Hasted and Lacy, 1994) (1995)

()
()

.(
-

.

- (Cook,1997)

.()

:
-1

×

.()

-2

.(2002)

-3

-4

× =)

(

:

)

.(1997

-

()

-

-

)
(15-10)

(

-)

(- -

2006/2/5 : -
.2006/2/12

: -

(10)

(Powers and Howley, 2001) :

(/ . 6.12)

:

$$\times = \frac{\times}{\times} = \frac{\times}{\times} =$$

(10)

()

.2

()

.1

.2

()

)

.(1996

)

.3

(1999) :

:

.1

:

.1

:

.2

)

.2

(

:

:

.1

:

-

(219)

	:		:	.2
	.	.1	.	
	.	.2	:	
	.	.3	.	.1
	.	.4	.	.2
.()	.5		
.		.6		
.		.7	(1987)
.		.8	:	
.		.9		.1
) .		.10		
	.(1996			
)	.2
			(
	:			
	:			.3
) (1999)			
	:	(1997		.4
				.5
				.6
:	(1999)		.7
				.8
	(1999)		
	"	:		.9
"	(2005)		.10
				.11
	"			
:	(2000)		
%80-60)			
	12-6			
	.(

(0.86)

(3)

.(1993)

(180)

.(0.63 0.59)

.(1)

(1)

(0.28 0.27)

*				
0.649	6.57	173.19		
0.083-	1.36	20.59		
0.587	10.08	68.84		

(Duncan et al., 2005)

.(1 ±)

*

(16-15)

(0.5±)

(15.1)

(28)

):()

.(1987

()

(6-5)

(10)

.4

(10)

.()

.1

.2

(2)

- - ()

()	()	()	(/ .)	
10.22	69.03	0.63	2632.13	
1.79	10.11	0.037	635.85	
0.085-	0.587	0.456	0.274	
6	50.50	0.55	4167.53	
15	55	0.74	47378.56	

.180 =

" : -
) "
 " (1996
 (3)
 (3) (5)
 (.091) ()
 : -

(*)0.645	(*)0.392	(*)0.702	()
0.001	0.001	0.001	

.(178)

(0.01)

(*)

(3)

(0.702)

(0.001)

(2)

2006/2/5

.(1999

):

.1
 .2
 .3

.5

(4)

	beta		F	R square	R square change			
0.001	0.724	0.001	172.57	0.492	0.492	0.489	0.702	
0.001	0.580	0.001	1037.49	0.921	0.492	0.921	0.960	+
0.001	0.268	0.001	4615.21	0.987	0.066	0.987	0.994	+ +

(0.05 ≥

(4)

(0.492)

(0.066)

(beta)

(4)

(0.724)

(0.268)

(0.580)

(0.645 0.392)
(0.001 0.001)

.6

"

()

-1

(4)

-2

()

-3

a)

0.987

- G.C. 2004. Upper-body Power as Measured by Medicine-Ball Throw Distance and its Relationship to Class Level among 10- and 11-year-old Female Participants in Club Gymnastics, South Bay Sports and Physical Therapy, Copiague, USA.
- Stockbrugger, B.A. and Haennel, R.G. 2001. Validity and Reliability of a Medicine Ball Explosive Power Test, Faculty of Kinesiology and Health Studies, University of Regina, Regina, Saskatchewan, Canada.
- Mayhew, J.L., Bird, M., Cole, M.L., Koch, A.J., Jacques, J.A., Ware, J.S. and Buford, B.N. 2005. Comparison of the Backward Overhead Medicine Ball Throw to Power Production in College Football Players, Human Performance Laboratory, Truman State University, Kirksville, Missouri, USA.
- Powers, Scott K. and Edward T. Howley. 2001. Exercise Physiology, 4th edition, U.S.A, Mc Graw-Hill Companies INC.
- Salonia, M.A., Chu, D.A., Cheifetiz, P.M. and Freidhoff,

Utilizing the Power Equation to Measure the Upper Extremity Explosive Power (Descriptive Study)

*Aman Khasawneh and Usama Ta'i**

ABSTRACT

The study aimed at Utilizing the power equation (strength \times speed) to measure the upper extremity explosive power. It also aimed at investigating the relationship between the scores of the prone push – up test achieved by counting repetitions and the scores of the same test achieved utilizing the power equation. Moreover, it aimed to identify the most important variable (weight, arm length, repetition) contributing into the power equation.

One hundred and eighty physical education students from the Hashemite University participated in this descriptive study.

The results showed that there were a significant relationship between the scores of the test obtained by repetition and the scores obtained by power equation. In addition, the results showed that repetition, weight and arm length have significantly contributed to the power equation. The ratio of contribution was (0.492) for repetition and weight, and (0.066) for the arm length.

The researchers recommended including the variables of weight, arm length and repetition, in evaluating power scores of the push up test for the upper extremity.

Additionally including the anthropometric measurements in the power equation in future studies.

Keywords: Utilizing, Power Equation, Explosive Power, Upper Extremity

* Faculty of Physical Education and Sport Sciences, The Hashemite University, Zarqa, Jordan. Received on 18/5/2006 and Accepted for Publication on 27/11/2006.