

Mental Toughness and the Level of Achievement for Female Physical Education Teachers

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Abstract

This research aims to standardize a mental toughness scale and achievement level scale for female physical education teachers, as well as identify percentage of mental toughness dimensions and achievement level scale for the female physical education teachers and the differences between female teachers in light of years of experience. Research sample has been selected from public preparatory schools at menofia governorate during 2009/2010 school year, and consisted of (37) female teachers (36.61 years, 14.95 years of experience), which represents (34.26%) of the population. The number of pilot study sample for scale standardizing was (30) female teachers which represents (27.78%) of population. The two researchers have used mental toughness scale and achievement level scale for the female physical education teachers "designed by them". The study results suggests that both scales could be considered standardized and consisted of 5 and 4 dimensions for mental toughness scale and achievement level scale respectively. Percentages of mental toughness dimensions and achievement level axes of physical education female teachers differed according to the number of experience years. There was a strong correlation between mental toughness dimensions and achievement level axes and dimensions for the female physical education teachers. Whenever the female teacher (are characterized by good degree of mental toughness they accordingly enjoy best achievement level.

Keywords: *Commitment-Control- Challenge- Self Confidence- Motivation- preparation and planning- lesson implementations- special program- implementing school physical education program- professional development plus the ability of innovation- school activities supervision- activity axis as a member in school.*

Introduction:

Physical education teacher represents one of the most important elements of the educational system which is responsible for imposing school system through diverse school activities, including sport. Therefore the teacher should have some features and professional capabilities and skills in order to positively affect his student's personalities. (1:33)

Teaching is considered a source of many emotional situations which involve a huge amount of hard work which make more likely to be under psychological stress as a result of the

tremendous amount of responsibility placed on them during teaching process.

Through many practical experiences, teaching can be regarded as one of the most a demanding professions in Egypt. Perhaps the most prominent evidence of that is the withdrawal of large numbers of physical education teachers after several years of practice. This requires that the teacher should have some features and skills and mental toughness in order to cope with these pressures.

Mental toughness is considered one of the variables that contribute to the individual's ability to positively confront the pressure. As

the existentialism theory indicates that, it is easy for individuals who enjoys more toughness to commit themselves to what they do and to believe in their abilities to control pressures and regard change as a normal challenge allows them to grow (2:3)

"Mohamed. Al-Araby.Shamuon"(2007) thinks that mental toughness is the continuity of thinking positive and constructive and not giving up and the realistic performance (3:34).

"Gould and coworkers (2002) Indicates that mental toughness is the most important in accomplishing achievement. (4:177). "Julie Ray (2003) agree that mental toughness is important for optimal and maximum performance regardless of the circumstances. (5: 1).

"James Loehr" (1993) adds that the psychological skills which reflect mental toughness contribute by not less than 50% in accomplishing the achievement. (6:52).

Kobasa (1997) indicates that the persons with more toughness while facing pressures are characterized by more rigidity, achievement, control, leadership, self-control, activity, and more appreciative of their positive selves.(7:92)

Through general supervision on the practical education of faculty students and our interaction with female physical education teachers of different educational administrations schools in menofia governorate, we have noticed many emotional reactions from the female teachers during the daily situations which appear in the behavior directed towards the educational process elements and which negatively affects the achievement level of their work. We also noticed that measuring the achievement level of the female teachers is performed in a general way for all the school classes including physical education.

The evaluation among female teachers of other school classes was similar inside the class, unlike the evaluation among the female physical education teachers particularly which should be different due to the nature of the educational and practical part of every physical education class, features and targets which are performed in the school playground. This prompted and encouraged the two researchers to conduct this study in order to design a scale for the

achievement level for the female physical education teachers. As we were unable to observe single mental toughness scale for the female physical education teachers in current literature we found out that it would be prudent to design a scale for the mental toughness in the achievement level for the female physical education teachers.

Research Aims :

- 1- To design and standardize a scales of mental toughness and achievement level scale for the female physical education teachers.
- 2- Identifying the percentage of mental toughness dimensions in the light of years of experience.
- 3- Identifying the differences between research groups in the mental toughness dimensions for different years of experience in teaching.
- 4- Identifying the percentage of achievement level dimensions for the female physical education teachers in the light of years of experience.
- 5- Identifying the differences between research groups in the axes of achievement level in the light of years of experience.
- 6- The relation between mental toughness and achievement level in the research.

Research procedures :-

Research methodology:-

The two researcher have used the descriptive method supported by the survey studies in order to fit research nature.

Research sample :-

Research sample has been selected from female physical education teachers of prep schools in Menofia governorate 2009- 2010.

The sample number has reached (37) female teachers represents (34.26%) of the total original community. The average of their age is (38.6) years with standard deviation (± 8.53) .While the average age of their experience years is (14.95) with standard deviation ($6.20\pm$) .and the number of pilot sample to standardize the scale reached (30) female teachers represents

(27.78%) of the original community and out of the original research sample individuals.

Research tools :-

- Newly designed mental toughness scale for the female physical education teachers.
- Newly designed achievement Level scale for the female physical education teachers.

The application on the original sample of research:-

The two researchers after they have checked the validity of research tools (Mental toughness scale and Achievement Level scale for the female physical education teachers), they applied them on the original research sample (consisted) of 37 female teachers from Saturday 13-3-2010 to Thursday 8/4/2010.

Statistical processing plan:-

The two researchers have used the statistical program SPSS version 17 for data processing:

The arithmetic mean and standard deviation were used in this study, as well as the correlation coefficient, Cronbach alpha coefficient and analysis of variance. The two researchers have embraced the significance level (0.05) to accept the results.

Result discussion :-

Standardization of mental toughness scale for the female physical education teachers:

The researchers have used the consistency sincerity on (30) female teachers of the survey sample. the results indicated that correlation coefficients ranged between the degree of Phrase and the total degree of the dimension using internal consistency sincerity between (0.230 - .673) on significant level (0.05) = 0.361 . Which shows the sincerity of phrases. The correlation coefficient between each phrase and the total degree of the scale ranged between (0.682 – 0.518) which refers to the sincerity of scale terms representation, while correlation coefficient between the degree of each dimension and the total degree of the scale

ranged between (0.681 – 0.614) which refers to the sincerity of dimension representation of the scale.

Stability coefficient of the scale ranged between (0.683 – 0.733) by using Cronbach alpha coefficient of scale dimension and are an acceptably high. This indicates that mental toughness scale for the female physical education teachers has high constant values. By this, mental toughness scale became in its final form (81) phrases and its degrees range between (81 – 243) degrees. All scale phrases are in the positive direction except the phrases (10, 25, 53, 77) .

Standardization of achievement level scale for the female physical education teachers :

Correlation coefficients between Phrase and the total of dimension represented by the using the internal consistency sincerity ranged between (0.682- 0.577) on significant level (0.05) = 0.361 which shows Phrase terms representation sincerity of the measured dimension. Also correlation coefficients between dimension degree and the total degree of the axis ranged between (0.672 – 0.600) which shows the sincerity of terms scale representation. As well as correlation coefficient between each axis degree and the total degree of the scale ranged between (0.641 – 0.612) which refers to the sincerity of dimension representation of the scale. While correlation coefficient between the degree of each term and the total degree of the scale ranged between (0.674 – 0.608) which refers to the validity of term representation of the scale.

And the constant\stability coefficient ranged between (0.658 – 0.671) through using Cronbach alpha coefficient of the scale axis and it was accepted constant coefficients .This indicates that achievement level scale of female physical education teachers has a high constant values . thus the achievement level scale for the physical Education female teachers became in its final form (51 terms) ,its degrees range between (51 – 204) degree.

Table (1)

The Mean and The Percentage for Dimensions of Mental Toughness Scale Of Physical Educational Female Teachers in The Variable years of Experience.

Variables	Number of phrases	Minimum Degree	Maximum Degree	5:>10year		10:>20year		20> year	
				Mean	%	Mean	%	Mean	%
Commitment	20	20	60	54.08	90.13	51.35	85.58	48.60	81.00
Control	18	18	54	44.33	82.09	47.40	87.78	48.80	90.37
Challenge	16	16	48	39.08	81.42	43.55	90.73	41.60	86.67
Self Confidence	12	12	36	31.92	88.67	34.20	95.00	33.00	91.67
Motivation	15	15	45	39.83	88.51	42.25	93.89	37.80	84.00
The total scale	81	81	243	211.25	86.93	218.95	90.10	212.40	87.41

Table (1) shows that female physical education teachers who have experience years range between 5 to 10 years are characterized by the dimension of "commitment". while female teachers of 10 to 20 years of experience are characterized by the dimensions of "challenge,

self-confidence, motivation level and the total degree of mental toughness scale". Also it is clear that female teachers of more than 20 years of experience are characterized by the dimension of "control"

Table (2)

One way ANOVA between the three groups in Dimensions of Mental Toughness Scale Of Physical Educational Female Teachers (N=37)

Variables	Source of variation	Sum of Squares	df	Mean Square	F
Commitment	Between Groups	36.088	2	18.044	17.69*
	Within Groups	34.667	34	1.020	
	Total	70.755	36		
Control	Between Groups	22.738	2	11.369	11.98*
	Within Groups	32.267	34	0.949	
	Total	55.005	36		
Challenge	Between Groups	46.060	2	23.030	15.96*
	Within Groups	49.067	34	1.443	
	Total	95.127	36		
Self Confidence	Between Groups	15.960	2	7.980	13.48*
	Within Groups	20.117	34	0.592	
	Total				

	Total	36.077	36		
Motivation	Between Groups	34.804	2	17.402	
	Within Groups	40.217	34	1.183	14.71*
	Total	75.021	36		
The total scale	Between Groups	502.681	2	251.341	
	Within Groups	608.400	34	17.894	14.05*
	Total	1111.081	36		

Shows the significant level $p < 0.05$

**Required table value for significance at $df (2, 34)$ is 3.28*

Table (2) shows differences of statistical of mental toughness scale for the female significance between 3 groups in the dimensions physical education teachers.

Table (3)

L.S.D between the three groups in Dimensions of Mental Toughness Scale Of Physical Educational Female Teachers (N=37)

Variables	Groups	Mean	L.S.D	5:>10year	10:>20year	20> year
Commitment	5:>10year	54.08			2.73*	5.48*
	10:>20year	51.35	1.44			2.75*
	20> year	48.60				
Control	5:>10year	44.33			3.07*	4.47*
	10:>20year	47.40	1.13			1.40*
	20> year	48.80				
Challenge	5:>10year	39.08			4.47*	2.52*
	10:>20year	43.55	1.22			1.95*
	20> year	41.60				
Self Confidence	5:>10year	31.92			2.26*	1.08*
	10:>20year	34.20	0.87			1.20*
	20> year	33.00				
Motivation	5:>10year	39.83			2.42*	2.03*
	10:>20year	42.25	1.24			4.45*
	20> year	37.80				
The total scale	5:>10year	211.25			7.70*	1.15
	10:>20year	218.95	2.14			6.55*
	20> year	212.40				

Shows the significant level $p < 0.05$

*Required table value for significance at $df (2, 34)$ is 3.28

Table (3) shows statistical significance between 3 groups in the dimensions of mental toughness scale for the female physical education teachers. The 20 years experience female teachers have significantly better dimension of "control",

while the female teachers of 10-20 years of experience are defined with the dimensions of challenge, self confidence, motivation, total degree of mental toughness scale).

Table (4)

The Mean and The Percentage for Dimensions of The Level of Achievement Scale Of Physical Educational Female Teachers in The Variable years of Experience.

Variables	Number of phrases	Minimum Degree	Maximum Degree	5:>10year		10:>20year		20> year	
				Mean	%	Mean	%	Mean	%
P.P	8	8	32	24.58	76.81	20.65	64.53	15.40	48.13
I.L	11	11	44	37.92	86.18	30.50	69.32	20.60	46.82
C	6	6	24	13.75	57.29	18.65	77.71	22.40	93.33
S.A	12	12	48	35.00	72.92	43.55	90.73	20.40	42.50
S.P	3	3	12	10.67	88.92	7.15	59.58	4.20	35.00
I.S.P.E	40	40	160	121.92	76.20	120.50	75.31	83.00	51.88
A.M.S	7	7	28	12.17	43.46	20.35	72.68	26.60	95.00
P.D.A.I	4	4	16	14.67	91.69	10.95	68.44	60.40	40.00
The total scale	51	51	204	148.76	72.92	151.80	74.41	116.00	56.86

Table (4) indicates that female teachers of 5 to 10 years of experience are characterized by "preparation and planning (P.P), lesson implementations (I.L), special program (S.P), the total degree of implementing school physical education program (I.S.P.E) and professional development plus the ability of

innovation (P.D.A.I). Female teachers of 10- 20 years of experience are characterized of "school activities supervision" (S.A) and the total scale of the achievement level. It also shows that female teachers of more 20 years are characterized by control (C) –the total of her activity axis as a member in school (A.M.S)."

Table (5)

One way ANOVA between groups in Dimensions of The Level of Achievement Scale Of Physical Educational Female Teachers (N=37)

Variables	Source of variation	Sum of Squares	df	Mean Square	F
P.P	Between Groups	80.249	2	40.125	17.34*
	Within Groups	78.667	34	2.314	
	Total	158.916	36		
I.L	Between Groups	110.710	2	55.355	23.20*

	Within Groups	81.117	34	2.386	
	Total	191.827	36		
C	Between Groups	30.846	2	15.423	
	Within Groups	32.000	34	0.941	16.39*
	Total	62.846	36		
S.A	Between Groups	79.631	2	39.816	
	Within Groups	64.150	34	1.887	21.10*
	Total	143.781	36		
S.P	Between Groups	30.404	2	15.202	
	Within Groups	22.017	34	0.648	23.46*
	Total	52.421	36		
I.S.P.E	Between Groups	482.829	2	241.414	
	Within Groups	327.917	34	9.645	25.03*
	Total	810.746	36		
A.M.S	Between Groups	34.504	2	17.252	
	Within Groups	33.417	34	0.983	17.55*
	Total	67.921	36		
P.D.A.I	Between Groups	44.024	2	22.012	
	Within Groups	32.817	34	0.965	22.81*
	Total	76.841	36		

Shows the significant level $p < 0.05$

**Required table value for significance at $df (2, 34)$ is 3.28*

Table (5) refers to a statically significant physical education female teachers ,for that the differences between the 3 research groups on two researchers have calculated the least the dimension of achievement level scale for the significant differences L.S.D .

Table (6)

L.S.D between groups in Dimensions of The Level of Achievement Scale Of Physical Educational Female Teachers (N=37)

Variables	Groups	Mean	L.S.D	5:>10year	10:>20year	20> year
P .P	5:>10year	24.58	1.09		3.93*	9.18
	10:>20year	20.65				*
						5.25

					*
	20> year	15.40			
	5:>10year	37.92		7.42*	17.32*
I.L	10:>20year	30.50	2.11		9.90*
	20> year	20.60			
	5:>10year	13.75		4.90*	8.65*
C	10:>20year	18.65	1.13		3.75*
	20> year	22.40			
	5:>10year	35.00		8.55*	14.60*
S.A	10:>20year	43.55	2.48		23.15*
	20> year	20.40			
	5:>10year	10.67		3.52*	6.47*
S.P	10:>20year	7.15	0.98		2.95*
	20> year	4.20			
	5:>10year	121.92		1.42	38.92*
I.S.P.E	10:>20year	120.50	3.26		37.50*
	20> year	83.00			
	5:>10year	12.17		8.18*	14.43*
A.M.S	10:>20year	20.35	2.41		6.25*
	20> year	26.60			
	5:>10year	14.67		3.72*	8.27*
P.D.A.I	10:>20year	10.95	1.28		4.55*
	20> year	6.40			

Table (6) refers to a statistically significant differences between the groups on the dimension of achievement level scale for the physical education female teachers and indicates that female teachers of 5 to 10 years of experience are characterized by preparation and planning, lesson implementations, special

programs, the total degree of implementing physical education axis and professional development plus the ability to innovate. Female teachers of 10- 20 years of experience are characterized by school activities supervision and the total scale of the achievement level.

Table (7)

The correlation coefficient between the Mental Toughness and The Level of Achievement Of Physical Educational Female Teachers (N=37)

Variables	P.P	I.L	C	S.A	S.P	I.S.P.E	A.M.S	P.D.A.I
Commitment	0.997*	0.996*	0.996*	0.625*	0.998*	0.883	0.997*	0.998
Control	0.957*	0.957*	0.991*	0.445*	0.986*	0.762*	0.991*	0.964*
Challenge	0.491*	0.492*	0.624*	0.296	0.604*	0.105	0.624*	0.513*

Self Confidence	0.398*	0.399*	0.539*	0.393*	0.518*	0.002	0.539*	0.422*
Motivation	0.528*	0.528*	0.386*	0.980*	0.409*	0.822*	0.386*	0.806*

*Shows the significant level $p < 0.05$

*Required table value for significance at $R = 0.325$

Table (7) shows the statistical significant correlation between the mental toughness dimensions and achievement level dimensions and axis for the physical education female teachers. Also the table illustrates the statistical significant correlation between the challenge and supervision on the activities, and also between challenge and the axis of implementing the physical education program in school and between self-confidence dimension and implementing the physical education program in school.

Conclusions :

- 1- Researchers designed and standardize mental toughness scale for the physical education female teachers, which consists of 81 terms representing 5 dimensions (commitment, challenge, self-confidence , motivation level)
- 2- Researchers designed and standardize achievement level scale for physical education female teachers, which consists of 51 terms representing the axis of (implementing sport program and its dimension, sport session , supervision on activities as a school member – their professional development and ability of innovation)
- 3- The percentage of mental toughness dimensions and achievement for the physical education female teachers differs according to years of experience.
- 4- Physical education female teachers of 10 to less than 20 years of experience enjoy greater degree of mental toughness and achievement level compared to female teachers of less or more years of experience in the total degree of the two scales.
- 5- There is a correlation between mental toughness dimensions and the achievement level dimensions and axes

for the physical education female teachers.

Recommendations :-

- 1- To use the mental toughness scale and achievement level scale for the physical education female teachers in public and private schools and also in physical education schools.
- 2- Analyzing the components of the mental toughness and achievement level for the physical education female teachers in primary, prep., and secondary schools (general and technical).
- 3- Conducting a studies to identify the differences between male and female teachers in the components of mental toughness
- 4- To use achievement level scale for the physical education female teachers as a tool to evaluate female teacher`s performance

References:-

- 1- Amin .A.Elkholy, Mohamed .E.Hasan (2001): Stress of professional physical education teacher in Educational area east of Cairo, Published research, International Scientific Conference "Sport and globalization ", Volume II, Faculty of Physical Education, Helwan University .P33.
- 2- Ahmed .N.Ibrahem , Tamer .E.Elgbaly(2009): Accelerometer mental sports coach, Published research, Fourth Regional Conference of the International Council for Health and Physical Education, Recreation and Sport and the kinetic expression for the Middle East, Journal of the Faculty of Physical Education, Alexandria University.P3.
- 3- Mohamed. Al-Araby.Shamuon (2007): Mental Toughness and sporting achievements, Annual Scientific Conference of the International Department of Sport and Exercise Psychology (mental health care for athletes),

Faculty of Physical Education, Helwan University.P34.

4 - Gould., Dieffenbach, K. & Moffett, A. (2002): Psychological characteristics and their development in Olympic champions, *Journal of Applied Sport Psychology*, 14, p174.

5 - Julie Ray (2003): <http://forum.iraqacad.org/viewtopic.php?f=43&t=1982.p1>.

6- James, E, Loehr (1995): *The New Toughness Training for Sports*. New York: Penguin Books, USA.

7 - Kobasa S.C., Maddi, S, R, Puccatte, M .Cand Zola, M .A (1995): Effectiveness of Hardiness, Exercise and Social Support as Recourse against Illness. *Journal of Psychosomatic Research Quarterly* 29. P 92.