The relationship between child's birth weight and mental retardation among low-weight children

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Abstract
People with developmental mental retardation cannot adapt with social, academic as well as family situation. There are some variables which are effective on the child during pre and post partum periods so that 10 percent of the problems can be ascribed to low weight at birth. This study aimed to determine the relationship between mental retardation (MR) and low-weight at birth with respect to gender parents' relativeness, mothers' age during pregnancy, the family's' socio-economic status. Statistical community included all students in Exceptional as well as normal schools. The sample was selected randomly among the children (180 people). The applied statistics were t-test, logistic regression, Chi square as well as descriptive statistics. Results showed a significant relationship between low weight at birth and MR which is higher among parents who were relative. No significant relationship was found between fathers' Literacy level and the child MR; however the relationship for mothers was existed.

Introduction
Exceptional children are a group who cannot be adapted with their environment. In fact, the group needs to especial methods of training as well as education which in turn imposes a large cost on the society (Honeycutt et al., 2003). There is an accepted general classification of the children as:

1) Children and adolescents who com be differentiated from normal ones in terms of intelligence quotient (IQ) and mental functions; Gifted as well as MR children can be put in the group;

2) children and adolescents who their behavioural disorders can be ascribed to brain damages; and 3) A group with sensory-motor or developmental deficiency (Milanifar, 2008).

According to World Health Organisation (WHO) 2-3 percent of children need to extra ordinal education at especial schools. APA(2013) in DSM-V reported 1% MR among children. Although, the most of the MR cases are preventable, the custodial group wastes a lot of economical sources and imposes a heavy weight on the society (Milanifar,2008).

Suspended symptoms of MR at birth

1) Severe low –weight; 2) abnormal size of skull, very large or small; 3) hypoxia or blue body at birth;   4) convulsions or spasm of neonates; 5)severe low appetite or problem in feeding at first weeks of birth as well as low reaction to stimulation.

In the following, some causes which lead to MR will be described in details.

Prematurity and intrauterine growth Retardation giving birth before the 37th weeks of the last regulation is called prematurity be who. Neonates With severe low-weight at birth (less than 1KG) are known as premature. It seems that prematurity is related to short period of pregnancy, small for

gestational age or both of the elements. However, the definition for low-birth neonates should be extracted from normal ones in terms of genetics as well as environment (Nelson,2001).The children usually have problems like hypoglycemia, low body temperature and low calcium of blood. They also cannot tolerate intrauterine stresses such as Hypoxia, acidosis and malnutrition (Evans, 2013).

Causes of intrauterine low-growth

 1) Fetus –related causes include, A) Innate abnormalities, and chromosomal deficiencies; B) Physical   abnormalities, C) twining

2-)placenta deficiency

3-)Maternal problems encompass intrauterine infections, cardiac diseases, smoking, severe malnutrition.

4-)Environmental causes like living in high land and socio-economic elements(Evans,2013). For example, low-weight at birth is double among blacks compared to whites and there is a high positive relationship between SES and low growth of intrauterine (Petik, 2012).

Consequences of low-weight at birth

Very small children are more exposed to death, because their immunisation system is incomplete

(Troyb, 2013). They have also uncompleted systems of reflexes which are necessary to their life. Low –weight also has long –term consequences. For example, in a meta-analysis of 80 studies low-weight at bird children (LWBC) achieved 6 points less than a group with normal weight (97.7compared to 103.78) (Matson et al., 2013). The difference was significant. The children who born at 7 months of pregnancy are not as well as normal ones in terms of memory and attention tests (Chiodo et al., 2009; Zigler,2013). According to previous studies LW BC have developmental problems at birth and their IQ was significantly lower than a normal group.

Methodology

Statistical community and sampling method

 Statistical community included all exceptional as well as normal children who studied at Ahvaz exceptional and normal schools. Firstly, among exceptional children with l0 years, 90 people (37male, 53 male) were selected randomly. The 90 children among normal schools were matched with the group in terms of age, gender as well as socio-economic status.

Instrumentation

The necessary information for the study was collected from health documents which were already classified in the schools. Some information also was gathered via interview with mothers of the children.

Design research and applied statistics

In this study descriptive methods beside Chi square, proportion companion, t.test, and regression were applied to analysis data.

Findings

Descriptive

Table 1.descriptive findings

variables		MR children frequency(percent)	Control group	Overall frequency(percent)
Gender	Female	24(26.7)	38(42.2)	62(34.4)
	male	66(73.3)	52(57.8)	118(65.6)
Age of mother	<18	6(6.7)	7(7.8)	13(7.2)
	19-35	60(66.7)	72(80)	132(73.4)
	>36	22(24.4)	9(10)	31(17.2)
	No answer	2(2.2)	2(2.2)	4(2.2)
Job of mother	householder	85(94.5)	78(86.7)	163(90.6)
	Worker	4(4.4)	12(13.3)	16(8.9)
	clerk	1(1.1)	_	.6(1)
Jeb of father	Worker	61(67.8)	32(35.6)	93(51.7)
	Clerk	29(32.2)	58(64.4)	87(48.3)
Literacy of mathers	Illiterate	41(45.6)	11(12.2)	52(28.9)
	Elementary	28(31.1)	24(26.7)	34(18.9)
	Guidance	8(8.9)	26(28.9)	52(28.9)
	High school	10(11.1)	25(27.80	35(19.4)
	University	3(3.3)	4(4.4)	7(3.9)

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According to content of table.1   pregnancy of mothers at 35 was higher among the MR group compared to the control one. The illiteracy rate for the MR groups' mothers was also higher than the other group. Around 90 percent of the mothers were householder and around 70 percent fathers were worker.

Table   2.frequency and percentages of the sample

Variables		MR children frequency(percent)	Control group frequency(percent)	Overall frequency(percent)
Literacy of father	Illiterate	24(26.7)	4(4.4)	28(15.6)
	Elementary	32(35.6)	20(22.2)	52(28.2)
	Guidance	14(15.6)	19(21.1)	33(18.3)
	High school	12(13.3)	40(44.4)	52(28.9)
	University	8(8.9)	7(7.8)	15(8.3)
Parents' relativeness	Yes	56(62.2)	48(53.3)	104(57.8)
	No	32(35.6)	39(43.3)	71(39.4)
	No answer	2(2.2)	3(3.3)	5(2.8)
Type of residence	rent	61(67.8)	29(32.2)	90(50)
	Private	28(31.1)	61(67.8)	89(49.2)
	No answer	1(1.1)	_	1(.6)
Income	Good	8(8.9)	11(12.2)	19(10.6)
	Middle	48(53.3)	70(77.8)	118(65.6)
	Low	34(37.8)	9(70)	43(23.9)

Refer to the table 2 many of fathers in MR group are illiterate, while the control group's father has many with high school level. Majority of MR group family lives in rented homes; however the other group lives in the private ones. The MRs' families have the lowest income (more than one third was low in this regard).

Table 3. Descriptive characteristics of the groups

variables		MR children frequency(percent)	Control group frequency(percent)	Overall frequency(percent)
Quantity 0f siblings	<2	12(13.3)	5(5.6)	17(19.5)
	3-5	48(53.4)	59(65.6)	107(59.4)
	<6	30(33.3)	26(28.8)	56(31.2)
Weight at birth	<1500	12(13.3)	3(3.3)	15(8.4)
	1501-2499	24(26.6)	5(5.5)	29(16.6)
	>2500	54(59.9)	82(91)	136(75.8)
birth situation	premature	11(12.2)	1(1.1)	12(6.7)
	Late	9(10)	1(101)	10(5.6)
	normal	63(70)	88(97.8)	151(83.9)
	No answer	7(7.8)	_	7(3.9)
Physical situation post-partum	Head injury	24(26.7)	_	24(13.3)
	infections	20(22.2)	5(5.6)	25(13.8)
	Malnutrition	1(101)	_	1(.6)
	Convulsion	17(18.9)	_	17(9.4)
	Gland disorders	1(101)	_	1(.6)
	No answer	27(30)	85(94.4)	112(62.2)

According to table 3 the most of control group (65.6%) are in 3-5 class of children. Around 40%of MR
Children are low-weight at birth. Prematurity and late births are common problems among MR group. While 70% of MR group had normal birth, the value for the control was around 98%.

Table 4. Descriptive characteristics of the groups

Variables		MR children frequency(percent)	Control group frequency(percent)	Overall frequency(percent)
Mothers' mental status at giving birth	Neurotic problems*	3(3.3)	_	3(107)
	Chronic stressors of daily life	1(101)	_	1(.6)
	Phobia	3(3.3)	_	3(1.7)
	Undesigned pregnancy	46(51.1)	2(2.2)	48(26.1)
	Other	37(41.1)	88(97.8)	125(69.9)
Chronic interval with previous child	<3	59(65.6)	36(39.6)	95(*52.8)
	>4	25(27.7)	54(5.9.8)	85(47.3)
	No answer	6(6.7)	_	6(3.3)
Mathers' physical situation during pregnancy	Chronic infections	1(1.1)	2(1.1)	1(1.1)
	Physical problems	1(1.1)	_	1(.6)
	X-ray	1(1.1)	_	1(.6)
	Malnutrition	2(2.2)	_	2(1.1)
	Drug taking	11(12.2)	1(1.1	12(6.7
	Abortion, contraceptive pills	5(5.6)	1(1.1)	6(3.3)
	Physical injury	2(2.2)	1(1.1)	3(1.7)
	Convulsion	1(1.1)	_	1(.6)
	Other	66(73.3)	88(95.6)	152(84.4)

*Anxiety, Depression, phobia

According to table 4 undesigned pregnancies is the highest among effective elements on mothers' mental status. Among other effective agents in this regard can refer to mothers' drug taking, having contraceptive Pills and abortion. Some problems such as drug abuse, Alcohol abuse, toxicities, disability and gland disorders were not reported.

Table 5. Hypothesis testing (t.test)

variables	T	df	P	ES
MR	6.35	1	<.001	.135
Parents' relativeness	4.27	1	<.001	.201
Mothers' age low-weight	4.81	1	<.001	.201
Low-weight gender	4.95	1	<.001	.191

With respect to content of table 5, it can be said that low-weight at birth is a discriminative agent to know MR children as soon as possible. Chi square test also showed similar results: OR=7.52, P<.001 and OR=20 .97, P< .001.for the females Chi square also showed similar results: OR=11.2, P<.001.

Discussion

According to the results it can be said that LWAB is directly related to MR. some studies

Also showed evidences in this regards. For example, Saigel et al. (2000) reported a significant relationship between LWAB and low IQ. Singer et al. (2007) also found an in line results. In another study Hack et al. (2007) found that mental functions of the children are lower than a control group with normal weight at birth. Nobauer et al. (2008) also found an effective agent in terms of LWA B on mental and scholar functions of the children. With respect to the situation which leads to a large number of children being MR, it can be said some elements such as malnutrition, oldness of mothers and infections are all effective in the situation.

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