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### RESEARCH ARTICLE

## OVERVIEW OF GROSS AND FINE MOTOR DEVELOPMENT IN CHILDREN AGE 4 TO 6 YEARS OLD IN ISLAMIC AND GENERAL PRESCHOOL

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#### Abstract

Development is an important role in the lives of children. There are still many children with developmental disturbance particularly on the development of gross motor and fine motor skills. There are several impact of these motor disturbances, such as the child would face difficulties to draw, to move from one place to another and so on. At this point, the research was conducted to comprehend how far children are able to perform tasks for motor development and which are not. The research design used was descriptive survey design with 353 respondents. Instrument in this study was PSQD (Pre-Screening Questionnaire of Development) which had been standardized by ministry of health. Results of this study were in the age group 48 gross motor development >80% can be achieved and fine motor >70%, aged 54 months at gross motor >90% and fine motor >80%, aged 60 months at gross motor >95% and motor subtle >95%, aged 66 months gross motor >90% and fine motor >80%, aged 72 months gross motor >80% and fine motor >90%. The conclusions of this research were more than 80% gross motor development are fulfilled and the development of fine motor more than 70% are fulfilled. However, there were some preschool children who were found to have gross and fine motor delay. Therefore, it can be suggested that improvement of the detection of early child development implementation is surely needed, so it can be discovered at an early stage when there is a developmental disorder in children, subsequently, children with developmental disorder can immediately obtain the intervention or treatment.

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#### Introduction:-

Early childhood is a very unique age group in the difference of developmental processes. Today it is frequently called as the golden age. Golden age is the best time to provide a strong provision to the child. It means that golden age is a very appropriate time to explore all the potential intelligence of children as much as possible (Suyanto, 2003; Nugroho et al., 2013). According to Sugitha (2014), gross motor development is an aspect of development of movement and posture (body position). While fine motor is the coordination of small muscles and is influenced by mature motor function and neuromuscular coordination both visual function and non verbal intellect (Sugitha, 2014).

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According to UNICEF 2005, the data was obtained the high rates of incidence of growth and development disorders in children aged under five, especially motor development disorders with 23.5 (27.5%)/5 million children were found suffering interference. The Central Statistics Agency of Indonesia in 2000 reported that 27.8 million out of 206.2 million of total populations were children<sup>4</sup>. According to BKKBN data in 2007, the number of children under five in the country reached 17% with population growth rate of 2.7% per year. From these developments, there were obtained an increase of 7% from the previous year which will affect the development of children.

Child development problems could be affected by variety of factors. According Soetjiningsih (2012), there are 2 main factors that influence the children development: genetic factors and environmental factors. Effort to optimize the process of development during childhood is through the implementation of education at the early age of children who often termed the education of children in the early childhood group (in Indonesian: Pendidikan Anak Usia Dini = PAUD). Within this framework, it is perfectly in accordance with UU No. 20 of 2003 on the National Education System and Government Regulation No.27 of 1990 on Preschool Education.

The purpose of this study was to identify the development of children aged 4 to 6 years old, especially the gross motor and fine motor aspects.

### Materials and Methods:-

The design of this research was descriptive survey, with cross sectional approach. The sample size was 353, and cluster sampling was used as the sampling method. Data about Instruments used in this study was PSQD (Pre-Screening Questionnaire of Development). Data of all variables was analyzed by using descriptive statistics as frequency and percentage.

### Result:-

Table 1 shows the distribution of kindergarten type, and Table 2 shows the distribution of age group of children.

**Table 1:-** Distribution of Kindergarten Type.

Kindergarten Type	Frequency	Percentage
Islam	177	50.1
General	176	49.9
Total	353	100.0

**Table 2:-** Distribution of Age Group of Children.

Age Group	Frequency	Percentage
48	15	4.2
54	37	10.5
60	108	30.6
66	164	46.5
72	29	8.2
Total	353	100.0

**Table 3:-** Description of gross motor development of 48 months age group.

Age Group (months)	n	Gross Motor Questions	Yes	No
48	15	P1 = drawing circle	93.3%	6.7%
		P2 = arranging 8 cubes	73.3%	26.7%

**Table 4:-** Description of fine motor development of 48 months months age group.

Age Group (months)	n	Fine Motor Questions	Yes	No
48	15	P1 = drawing circle	93.3%	6.7%
		P2 = arranging 8 cubes	73.3%	26.7%

**Table 5:-** Gross motor development of 54 months age group.

Age Group (months)	N	Gross Motor Questions	Yes	No
54	37	P1 = standing on 1 foot (6 seconds or more)	91.9%	8.1%

**Table 6:-** Fine motor development of 54 months age group.

Age Group (months)	N	Fine Motor Questions	Yes	No
54	37	P1 = arranging 8 cubes	89.2%	10.8%
		P2 = differentiate between long line and short line	89.2%	10.8%
		P3 = drawing plus sign (+)	100%	0%

**Table 7:-** Gross motor development of 60 months age group.

Age Group (months)	N	Gross Motor Questions	Yes	No
60	108	P1 = standing on 1 foot (6 seconds or more)	97.2%	2.8%
		P2 = jumping with 1 foot (2-3 times)	95.4%	4.6%

**Table 8:-** Fine motor development of 60 months age group.

Age Group (months)	n	Fine Motor Questions	Yes	No
60	108	P1 = differentiate long line and short line	98.1%	1.9%
		P2 = drawing plus sign (+)	95.4%	4.6%

**Table 9:-** Gross motor development of 66 months age group.

Age Group (months)	n	Gross Motor Questions	Yes	No
66	164	P1 = jumping with 1 foot (2-3 times)	95.7%	4.3%
		P2 = catching tennis ball (two hands)	92.1%	7.9%

**Table 10:-** Fine motor development of 66 months age group.

Age Group (months)	n	Fine motor Questions	Yes	No
66	164	P1 = drawing plus sign (+)	100%	0%
		P2 = drawing a man (3 parts of the body)	89.6%	10.4%
		P3 = drawing a man (6 parts of the body)	83.5%	16.5%

**Table 11:-** Gross motor development of 72 months age group.

Age Group (months)	n	Gross motor Questions	Yes	No
72	29	P1 = jumping with 1 foot (2-3 times)	100%	0%
		P2 = catching tennis ball (two hands)	82.8%	17.2%
		P3 = standing on 1 foot (11 seconds or more)	89.7%	10.3%

**Table 12:-** Gross motor development of 72 month age group.

Age Group (months)	n	Fine motor Questions	Yes	No
72	29	P1 = drawing a man (3 parts of the body)	93.1%	6.9%
		P2 = drawing a man (6 parts of the body)	93.1%	6.9%
		P3 = drawing a square	100%	0%

**Discussion:-**

According to the results obtained from the research, the majority of children were able to perform the task of gross motor development in accordance with their age. It could be seen from the age group of 54 and 60 month with the same development task, i.e being able to stand with one foot for 6 seconds, it was discovered that 54 month-old or less children could execute the task with 91.9% compared to 60 month-old with 97.2%. The age of 60, 66 and 72 month-old that have the same developmental task, i.e jumped with 1 foot, the rate obtained that children who can perform development tasks at 60 month-old reached 95.4%, 66 month-old at 95.7% and 72 month-old at 100%. These results were strengthened by Dariyo (2007) explanation which stated that age affects individuals to perform an activity. As the children is aging, it demonstrated the maturation of physical organs. It is also supported by the functioning of the central nervous system that coordinates the organs of the body, therefore one can perform fine motor and gross motor activities.

At the age of 66 and 72 month-old that both have the same developmental task, i.e catching tennis balls with both hands, the data obtained approximately 92.1% of 66-month-old children could already accomplished the task, meanwhile, the proportion for 72 month-old were at 82.8%. Besides, from the comparison data of 66 and 72 month-old children with similar developmental tasks, more children were able to perform the task at the age of 66 month-old, due to the number of girls being surveyed were greater at that age than at the age of 72 month-old. According to Hurlock (2002) this factor includes factors that could influence, such as gender. Overall, girls reach maturity faster on the sexual and reproductive systems than boys, this can be interpreted that the sex affects the process of child development.

Based on the results of the research, the same task implemented to the different age of the 48 and 54 month-old, yet the same command was given to arrange 8 cubes, the comparison data obtained with about 73.3% of 48 month-old children could perform competently while 89.2% of 54 month-old children have already demonstrated the developmental tasks. Besides, the same task was also given to different age of 54 month-old and 60 month-old, that was distinguishing between long lines and short lines developmental task, the proportion obtained with 89.2 % and 98.1% consecutively. At the age of 60 month-old and 66 month-old with drawing plus sign (+) developmental task, the proportion obtained with 95.4% for the age group of 60 month-old while 100% for the age group of 66 month-old. From the data mentioned it could be ensured that age undoubtedly influenced the maturation of children motor skill. Moreover, at the age group of 66 month-old and 72 months-old, the developmental task in drawing a man with a minimum of 6 parts of the human body reached 83.5% for the age group of 66 month-old, while 93.1% for the the age group of 72 month-old.

The impact of children who unsuccessfully achieve the developmental task, according to Susanto (2011), the children will consequently experience some difficulties while undertaking movements that involve fine motor, typically to do simple movements, such as flexing the fingers, grasping, squeezing, and attaching. Therefore, children will encounter trouble in writing and performing daily activities. In addition, it is essential to know that the progress of development in children varies depend on the children IQ. As mentioned in gross motor developmental above, according to Endang (2007), children with high IQ tend to develop faster than children who own normal IQ or below normal IQ.

**Conclusion:-**

According to the results of this study that have been done to the preschool aged 48 till 72 month-old which went to kindergarten at Islamic school and General in Kec. Kasihan area, the results obtained that the proportion for the 48 month-old children at >80% and fine motor at >70%, 54 month-old gross motor at >90% and fine motor at >80%, 60 month-old gross motor at >95% and fine motor a >95%, 66 month-old gross motor at >90% and fine motor at >80%, 72 month-old gross motor at >80% and fine motor at >90%.

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