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## Effect of incarceration on children's cognitive development

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### ABSTRACT

*Imprisonment of parents causes many hardships for children. Children of incarcerated mothers usually experience disruptions in their home environments and child care arrangements and usually also experience social stigmatization. Children who accompany their mothers into prison are exposed to conditions that in all probability affect their cognitive development. This study investigated the possible effects that growing up in prison has on the cognitive development of children incarcerated together with their mothers. 34 children ranging in age between 2 and 4 years participated in this study together with their mothers. 17 of the children (10 girls and 7 boys) were incarcerated with their mothers and the other 17 children (9 girls and 8 boys) were not incarcerated and lived with their mothers in their homes. The incarcerated children were matched in demographic characteristics with non incarcerated children. The SON-R 2.5-7, an individual intelligence test for general application which does not require the use of spoken or written language was administered to measure the cognitive ability of the children. Qualitative data was also collected through informal discussions with the mothers and the prison warders on their perceptions on the cognitive ability of the children. A one way Analysis of Variance (ANOVA) was computed to find out if there was a significant difference between the means of the two groups i.e the incarcerated and the non-incarcerated children. The results indicated a significant difference in performance between the two groups, with the incarcerated children performing worse than the non incarcerated children. Implications of the findings are discussed in relation to the cognitive development of 'incarcerated' and non 'incarcerated' children.*

## INTRODUCTION

Imprisonment of parents causes many hardships for children. Children of incarcerated mothers usually experience disruptions in their home environments with child care arrangements suffering the most disruption. The mothers and their children usually experience social stigmatization (Smith & Gogging 2002).

In many countries no one under the age of 18 is detained under prison service custody. This is because it is believed that children must be afforded a chance to reform in an environment that promotes their survival and development and as Coyle (2002) argues prison is not a place for children, it is meant for individuals who have committed serious crimes or who are a threat to society. Goldson (2002) adds that children should be held in prison only when there is absolutely no available alternative. This is because evidence has established that if a child deals with the criminal justice system early in life there is a greater danger that s/he will face difficulties later in her/his life.

Nowak (2003) recommends that children should not be kept in prison; however, should this be the case there should be special arrangements to ensure that coercive elements of prison life are kept to a minimum and ensure that an environment conducive for normal development is provided. Special effort must be made to ensure that the children while in prison can maintain and develop secure relations with family members. International standards demand that prisons put in place special arrangements to ensure that children are kept in a facility that is meant specifically for children.

Unfortunately, available information shows that in a number of countries, Zambia inclusive, most prisons do not have separate holding facilities for children who are in prison with their mothers (Central Statistical Office, 2004). The need for keeping children separate from adults in prison is aimed at ensuring that the social and development needs of children are given priority as well as preventing the adverse influence on the younger children by older and more sophisticated offenders. Furthermore children tend to learn and adopt inappropriate behaviours from adult inmates.

Alejos (2005), in her report, notes that a child who is with her mother in prison is necessarily separated from her father and other members of her family. She further explains that the child's life inside the prison leaves him/her vulnerable to disease, malnutrition and possible abuse by other prisoners or the guards. While the decision ought to be made on the basis of

the best interests of the child, often the decision for the child to accompany the mother in to prison is forced upon the mother and the child because of the circumstances outside their control. Small children who share imprisonment with their mothers often become victims of the frequently deficient, overcrowded and harsh prison systems.

Living in prison says Margolis (2002) presents a threat to children's safety. The potential for maltreatment at the hand of other prisoners or prison staff is ever present, particularly in facilities where sex offenders or child abusers may be held.

### Lack of Interaction

The effects on children's development are social and psychological as well as physical. Without access to standard education, children are at a disadvantage in terms of intellectual development. Margolis (ibid) states further that children incarcerated with their mothers must forgo opportunities to interact with peers and the outside world in general. These children rarely, if ever, venture beyond the prison walls and thus have little chance to adapt to normal society. Their world is limited in scope and largely influenced by what they observe in prison. Also positive role models may be rare in such an environment, potentially impeding children's moral development as well. Instead, these children are often surrounded by a culture of fear, negativity and helplessness.

Margolis (2002) in a study in Cambodia found that many mothers displayed anxiety about how the general environment of the prison and interaction with other prisoners might affect children living on the premises. When asked the effect that this had on children, one mother said that if children lived at the prison they could not go to school and their behavior would become different from children who lived outside the prison. When asked if the children's behaviour differed from other children, she said the children in the prison were living in "darkness" and they only saw prisoners.

### Isolation

Leventhal (2000) adds that children living in prison do not have the same opportunities for normal growth as their peers. He particularly singles out isolation from the outside world, as well as from friends and relatives and explains that isolation can prevent children from learning to function normally in society or interact with others. Other outcomes that Leventhal (ibid) mentions are obstacles to attending school which inhibit children's

intellectual growth while increasing isolation and reducing peer interaction. Most children living in prison have few playmates and those that they may have are usually other children of prisoners or of prison staff. Their world is very narrowly focused on prison life; as several of the women stated during the interviews, their children 'do not see anything beyond the prison walls'. This serves as a metaphor for a child's mental confinement as well as his or her physical confinement.

#### **Cognitive Development and Locomotion**

Catan (1988) also investigated the development of babies in prison using monthly recordings of the Griffith's scales. She found that, compared with those of similar ages who were not incarcerated with their mothers, there was little difference in overall development. The test scores of babies who spent longer than four years in prison revealed a gradual developmental decline over a four month period in two areas of development, namely locomotion and cognition. The developmental levels of babies left outside did not change over a four month period from the start of their mothers' sentence, incarcerated babies scores declined gradually and by the fourth month there was a statistically significant difference between the scores of the two groups which increased with time spent in prison. In a later study, Catan (1992) established that the most likely cause of this discrepancy was lack of stimulating toys and everyday objects, and the reluctance of mothers to allow the babies to sit and crawl on the floor because of hygiene and interference from other mothers and children.

In Zambia there is a sizeable number of mothers in prison with infants and children. Imprisoned mothers are allowed to keep new born babies or infants with them. The regulations stipulate that the mother and child should be kept in a separate unit on a continuous basis. However according to the Central Statistical office, CSO (2004) this does not happen because of overcrowding and lack of facilities which makes it difficult to allow mothers with babies or infants to be separated from the rest of the prison population. In a study on children in prisons and other correctional facilities done in 2008 in Zambia by The Child Justice Forum, it was established that there were no special facilities or diet provided for children. This meant that the women shared the facilities and their food rations with their children. This appalling situation cannot be considered to be ideal for the children because the environment is not conducive for proper child care and the nutrition is not adequate for the children's normal development.

#### **Exposure to Health Hazards**

A study done by Senanayake(2001) lists some of the adverse effects suffered by children inside prison. Senanayake showed that such children experience environmental hazards such as exposure to bad language, witnessing violence and risk of accidental injury. The children also lack adequate emotional security and stimulation because their mothers are often involved in other activities. The children also lack adequate play materials and play space and adequate sleeping facilities. There are also health problems in children imprisoned with their mothers. Problems such as stunted growth and low weight are often experienced because the children lack nutrition. The children often have scabies, head lice and diseases such as diarrhea and respiratory infections due to compromised hygiene.

Hanlon (2006) states that problems associated with parental incarceration usually tend to be intergenerational and vary in severity and complexity for both children and their mothers. One outcome of parental imprisonment is that there is increased vulnerability to the development of deviant behaviour among children. However studies have shown that the risks maybe lowered if children are less exposed to traumatic and other negative developmental experiences.

Stanley and Byrne (2000) state that the right age at which children should be separated from the imprisoned mothers is difficult to determine because the bond between mother and child is very important, therefore children should be allowed to stay with their mothers for as long as possible. Other experts (Coyle, 2002, Goldson, 2002, Smith and Goggin, 2002), however, argue that prison is not an ideal environment for child development therefore a child should not be allowed to remain with the imprisoned mother beyond the age of four years unless there is nowhere else for the child to be taken to.

Rosenberg (2009) noted that, in Bolivia, one NGO representative reported seeing a lot of repression in the children in prison as they were subjected to the same restrictions and punishments as their parents. Normal child behaviour such as waking up in the middle of the night and waking other inmates was forbidden in the prison. There was a lack of medical care and children sometimes received additional punishments alongside their parents such as going into solitary confinement with them. There were also problems such as lack of facilities, education and exposure to the world outside the prison walls. If children are

allowed to stay in prisons with their mothers, adequate and appropriate provisions must be made for them and safeguards put in place against their maltreatment.

In developed countries a limited number of Mother and Baby Units (MBU) are available which allow mothers and babies to stay together in prison until the babies reach nine or eighteen months of age (Stanley and Byrne, *ibid*). In most African countries, Zambia inclusive, such facilities are not available. Children in prison until with their mothers are exposed to a lot of hardships. CSO (*ibid*) reports that children do not get the right food and they are not spared the effects of overcrowding making them susceptible to many communicable diseases.

Parental imprisonment, according to Smith and Goggin (*ibid*), affects children in two main ways; some children accompany their mothers into prison while others are separated from their mothers and this happens during a crucial time in their cognitive development.

Senanayake (2001) argues that the prison environment is not a conducive environment for children to grow in. Senanayake explains that although children who accompany their mothers in prison do not experience adverse effects of separation from their primary care givers, they are exposed to conditions that affect their cognitive development. These adverse conditions include environments that lack adequate cognitive stimulation. Park & Clarke-Stewart (2001) also observe that there are several negative aspects to prison based co-detention. These include restriction on the child's freedom and the impoverished environment of the prison which may result in some impairments of the young child's cognitive, emotional and social development.

The prison environment however is not suitable for children to grow in, as shown by the reviewed studies (Senanayake, 2001, Park & Clarke-Stewart, 2001) arguing that children in prison with their mothers suffer psychological problems such as diminished cognitive abilities.

The Child Justice Forum (2008) indicated that the number of circumstantial children in prisons in Zambia i.e., children who are found in prison following their mothers' situation has increased. The study indicated that during the months of October and November 2007, there were less than 35 circumstantial children in Zambian prisons but by the end of February 2008, this number had increased to 47 children country wide. The findings of the study could be interpreted to mean that more and more mothers were entering prison with their children

Despite the growing number of children incarcerated with their mothers in Zambian prisons (Child Justice Forum, 2008), there is a general lack of literature in Zambia on the impact that imprisonment of mothers may have on their children incarcerated with them as no systematic research has been conducted to address the problem. The literature on child incarceration is often based on studies done mainly in Western countries where conditions may be radically different to those obtaining in Zambia.

The present study which is an attempt to investigate the probable 'effect' of child incarceration and the children's cognitive development in Zambia is important because it will attempt to alleviate the dearth of literature on this important subject. The study will contribute to the understanding of the relationship between child incarceration and their cognitive development.

## METHODS

This was a comparative study that examined the cognitive development of children growing up in prison with their incarcerated mothers and those that were not in prison. Data was collected from children aged between 2 and 4 years living at least with their mother. A sample of such children was considered appropriate for this study because children between the ages of 2 and 4 are at a crucial stage in their development and any negative effect in their environment would most likely affect them adversely in their adult life.

### *Sampling procedure*

Since the study utilized a population with specific characteristics, purposeful sampling was used to recruit participants from Lusaka central prison and Mukobeko Maximum prison in Kabwe. The justification for picking participants from these prisons is that they were the only prisons with the largest number of mothers incarcerated with their children. The sample consisted of 34 children with their mothers. 17 children were incarcerated with their mothers and 17 children were not incarcerated with their mothers. There were 19 girls (10 were incarcerated with their mothers 9 were not), and 15 boys (7 were incarcerated with their mothers and 8 were not). The incarcerated children were matched in demographic characteristics with the non incarcerated children.

It is important to mention that only a limited number of children fulfilling the inclusion criteria (2- 4 years) for children incarcerated with their mothers were found in the two prisons, therefore the sample in the study was quite small and may not be representative of children incarcerated with their mothers in Zambia.

#### *Data collection instruments and procedures*

The study utilized the SON-R 2.5-7 (Tellegen & Laros, 1993). This is an individual intelligence test for general application which does not require the use of spoken or written language in measuring the cognitive ability children. The test consists of 7 subtests which are mainly focused on visual-spatial abilities, abstraction and concrete reasoning. The SON-R has been used in Zambia before (Kabali:2009).

For this study only three subtests were used; the Situation sub-test, the Category sub-test and the Mosaic sub-test. The reason for using these sub-tests was that they were appropriate for the age of the children imprisoned with their mothers as supported by the pilot study we conducted earlier. The three sub-tests used were also considered to be culturally appropriate for 2-4 year old boys and girls in Zambia.

Authority was sought and received from the ministry of Home Affairs to carry out the study in the two prisons; Mukobeko Maximum prison in Kabwe and Lusaka central Prison in Lusaka. Consent for children to participate in the study was obtained from their parents (mothers) for both the study sample and comparison group.

The researcher administered the SON-R 2.5-7 to the children. Qualitative data was collected through informal discussions with the mothers and the Prison Warders.

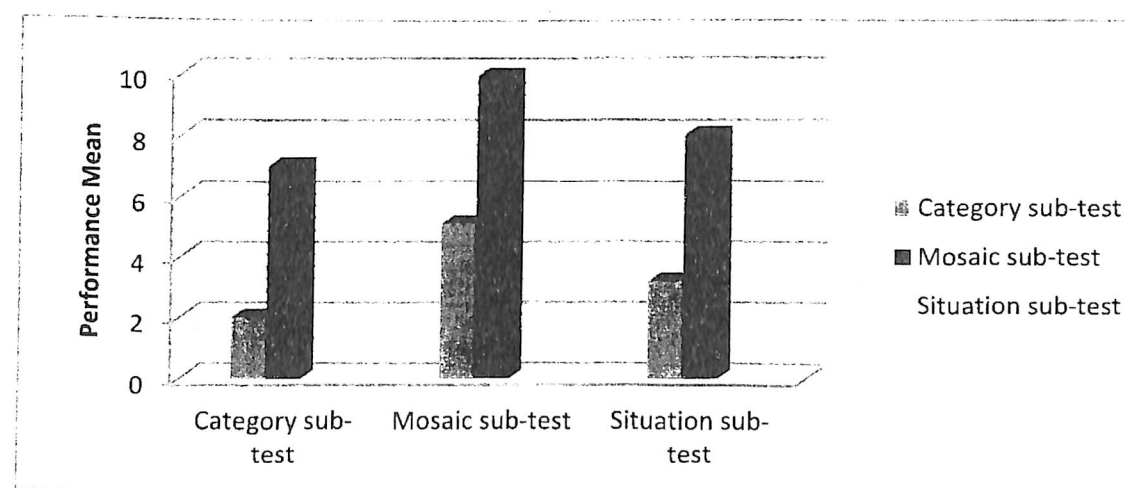
#### *Data analysis*

Data was analyzed using Analysis of variance (ANOVA) to test the hypothesis that; 'children incarcerated with their mothers will perform poorly on measures of cognitive development than children not incarcerated with their mothers.'

## RESULTS

Initially a distribution of means for all the SON-R sub-tests scores were compared for the incarcerated and non incarcerated groups. There was a difference in the distribution of means for all the three sub-tests between the two groups. The incarcerated children had a mean score of 2 while the non incarcerated children had a mean score of 7 on the Category subtest. On the Mosaic subtest incarcerated children had a mean score of 5.1 while the non incarcerated children had a mean score of 9.9. For the Situation sub-test, incarcerated children had a mean score of 3.2 while the non incarcerated children had a mean score of 8 (see Fig.1) below.

Fig1. Distribution of means for the SON-R sub test between the incarcerated and non incarcerated children.



KEY: Blue = Incarcerated children

Red = Non incarcerated children

A one-way ANOVA was done to find out if there was a significant difference between the means of the two groups. The results indicate that there was a significant difference between the incarcerated children and the non-incarcerated on all the three sub-tests. Category sub-tests,  $F(1, 34) = 199.1, p < .05$ . Mosaic subtests  $F(1, 34) = 31.2, p < .05$ , and Situation sub-test  $F(1, 34) = 61.1, p < .05$ . This result is supported by Levenes test of homogeneity which indicated that, the value of homogeneity of variances was not significant for the Category and Mosaic sub-tests (table 1b). This showed that the variances of the two groups were similar

and the interpretation is that the difference performance on the subtest can be attributed to the variables in the study and not the fact that the characteristics of the groups were different.

Table 1a ANOVA for SON-R Sub-tests

		Sum of Squares	Df	Mean Square	F	Sig
Category sub-test Groups	Between	288.265	1	288.265	199.005	.000
Mosaic subtest Groups	Between	174.382	1	174.382	31.288	.000
Situational subtest Groups	Between	248.941	1	248.941	61.002	.000

Table 1b: Test of Homogeneity of variances

	Leven statistics	df1	df2	Sig.
Category sub-test	2.272	1	32	.142
Mosaic sub-test				
Situation sub-test	2.648	1	32	.113
	7.192	1	32	.011

## DISCUSSION

Data analysis showed that the hypothesis was confirmed. ANOVA done on the three SON-R sub-tests showed that the children incarcerated with their mothers performed poorly on all the sub-tests (Category, Situation and Mosaic) compared to the non incarcerated children.

The results which showed significant differences in performance between the children incarcerated with their mothers and those that were not incarcerated are in agreement with most studies (Margolis, 2000, Alejos, 2005, Leventhal, 2000 and Catan, 1992, Ross, 2001) showing that prison has an adverse effect on the cognitive development of children.

Senanayake (Ibid) for example argues that children in prison lack adequate play materials and play space. This lack of stimulation and play materials does not allow enough cognitive stimulation and therefore stifles children's imagination.

This is similar to what the mothers and Prison Warders reported in this study. An informal discussion held with the mothers and the Warders revealed that the children who were incarcerated with their mothers lacked playing space and adequate stimulation.

From the perspective of intellectual growth it can be argued that confinement and lack of inter-social relations with peers make the incarcerated children lag behind in cognitive growth compared to children of their own age who are not incarcerated. The restriction on a child's freedom albeit inadvertent and the impoverished environment of the prison may result in impairment to the young child's cognitive development due to lack of exploration, lack of intellectual stimulation and possibly poor nutrition.

It would be difficult from this study to pin point the primary cause of the cognitive deficit of the incarcerated children as manifested by their poor performance on the three sub-tests of the SON-R. It is however blatantly clear that the incarcerated children performed poorly on all the three sub tests. Rather than attempting to identify any one factor as being responsible for the poor performance of the children imprisoned with their mothers, it would be more helpful to posit that it is the combination of incarceration factors such as lack of intellectual stimulation, isolation from children of the same age, lack of proper nutrition etc, all adverse conditions associated with the prison environment and life in Zambian prisons which accounted for the poor performance of the incarcerated children.

## CONCLUSION

Child incarceration can be considered an obstacle to children's psychological development and an impediment to their future prospects. All children, regardless of social and economic status, are entitled to enjoy their childhood years and to grow up fully in a natural environment. Children incarcerated with their mothers do not have the same opportunities as those in an open natural environment where they are free to participate in activities with their peers that are a crucial part of growing up.

Mundane activities such as playing, going to school and socializing with their peers are important for children's cognitive development. Incarcerated children however are denied this and do not get the opportunity to interact with others and to actively participate in and enjoy life.

Isolation from the outside world as well as from friends and other family members prevents incarcerated children from interacting with others and learning how to function fully in society. Lack of access to school inhibits their intellectual growth while increasing isolation and reducing peer interaction.

It can be argued that children who are incarcerated with their mothers are susceptible to all dangers that prison presents. The effects of incarceration in our opinion cannot be fully estimated because children are still growing and developing and therefore the impact of incarceration on their psychological health may not be immediately apparent.

The long term effects of child incarceration can only be speculated upon at the moment but our considered view is that it is damaging and disrupts the children's adult life.

Future research is needed to help scholars understand the effects of incarceration on the psychological development of the incarcerated child.

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## Etiology and manifestation of dyslexia among grade six pupils in Eastern Zambia.

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### ABSTRACT

*The terms dyslexia and reading disability are often used interchangeably. There are so many children who encounter reading problems in Zambia to an extent that some of them might complete seven years of primary education without the ability to read even a three letter word (MoE, 1992). A study conducted in Zambia by Matafwali (2005) revealed that, 49.1% of the grade three pupils could not read words at all. In addition, 57.5% could not read any single sentence. According to Kelly (2000), the reading level in some grade six pupils fell within the level expected of grade four. Therefore, it means that teachers who teach reading to dyslexic pupils face a lot of challenges. It is a well documented factor that, in the western world, reading disabilities play a major role amongst children who drop out of school and/or become delinquent (Zieman, 1999). In addition, it is important to know the factors which cause dyslexia so as to remediate the problem. The objective of the present study was to identify reading disabilities among grade six pupils and challenges that teachers face in teaching reading to these pupils. Informed consent was obtained from the respondents and then questionnaires were administered to those who agreed to participate in the study. Simple random sampling was used to come up with the required number of pupils using the class registers. Teachers were given questionnaires to answer on their own after they had understood the instructions. For the pupils, questionnaires had to be answered on a one-to-one basis with the researcher. The research design of this study was a quasi experimental design. A total of one hundred and ninety two (192) pupils and fourteen (14) teachers drawn from two districts in eastern Zambia were enrolled in the study. Results show that there was a moderate effect of lighting system at home and one's reading ability ( $F(10, 154) = 3.188, p < .05, \text{partial } \eta = 9.4$ ). As such, the nature of lighting system at home does not really affect*