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Punishment an Important Variable for Improved Cognitive Performance in Children

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Abstract

Cognition among children is not just complex but very cumbersome and complicated and requires extreme care and caution. This is because it is affected by many other factors and not just a single factor. This study examines the influence of punishment on cognitive performance in children. Longitudinal research methodology was used in this process by the researcher encompassing a cohort of 100 children over a 6-month period. A number of disciplinary measure's and methods were considered and examined in this research, time-outs, removal of haves, verbal reprimands, and physical punishment were among the measure's that were looked at. The outcome of this research gave the researcher a new view into the impact of the use of different punishment methodology on children. Among the various outcomes, the most important during the implementation of punishment varieties, time-outs, withdrawal of privileges, and verbal reprimands resulted in significant cognitive improvements, this emboldened the importance of the use of non-physical disciplinary techniques. Although corporal punishment as a method of punishment revealed a surprising improvement in cognitive enhancement, its impact was not very evident in comparable to any other form of alternative disciplinary methods mentioned above. The findings from the study brings to the forefront the importance of parents, educators, and policymakers prioritizing non-physical disciplinary methods that not only deal with the behavior of children when they go wrong, but also considering their cognitive development while ethical and emotional consequences of what ever disciplinary methods is chosen shall be implemented.

Keywords

Verbal Reprimands, Cognitive Enhancement, Punishment Varieties, Corporal Punishment, Punishment Methodology, Haves

1. Introduction

The cognitive development of every child is the core decoding factor of the success of the child be it in academics or in life and the child grows through the various stages of development. This topic exasperates the problem and brings it to life where c parents, educators, and psychologists might consider it a concern that has to be dealt with. The early stages of every child is very important as these stages set the stage for scholastic accomplishments, cognitive development as an ongoing process and the overall well-being and mental health of the individual. Therefore, gaining the necessary tools and advantages early or later for a child through the most appropriate use of a punishment tool will impact the cognitive development which is very important in determining future successes in the child's life.

This paper combs through and seeks to investigate the use of punishment, an important variable in education, culture, parent-child upbringing techniques which invariable is linked to the cognitive development in children. The kind and method of disciplining a child is significantly important and can be linked to parental practices on daily basis as well as it being subscribed into some educational policy requirements and practices. Punishment itself is a natural phenomena, but the nature, frequency and intensity is what creates either a positive or negative lasting effect on the cognitive development of the child.

The significance of this research seeks to go beyond an academic exercise or interest but rather attempts to inform, change and create alternative practical outcomes for parents, the education industry and policy makers. The objective of this paper is to suggest and give scientific evidence that has the potential to inform and advice decisions related to discipline and to ensure that cognitive development in children is either protected or enhanced through the most appropriate punishment. The extensive analysis of how punishment influences the cognitive development and also the variables that has to be present for academic performance and emotional well being of children will be analyzed.

Moreover, this paper will seek to add on to the ongoing concerns and discussions around some, if not all the ethical reasons, connotation and aspects of the use of physical punishment in the upbringing of children. This research also delves into the different practices involving discipline and analyzes their cognitive effects. Data will be provided in that argument around the most suitable methods of discipline.

In the sections that follow this paper, literature that already exists on this subject area will be explored. The research methodology used will be explained as it is the basis of this study. Lastly an examination of the relationships or correlations between punishment and cognitive abilities in children will be shown and discussed. The results of these new findings will be examined thoroughly recommending and offering practical and ethical ways of punishment for educators, families and policy makers or interventionist.

This study intends to look into details and investigate some of the variables that are likely to influence cognitive growth and development in children, for the pur-

poses of this task, punishment will be chosen as an important variable. One of the primary goals of this research is to look at how the variable punishment is either able to bring out the best potential in children by promoting positive cognitive development or other wise. In any sense where ever there is punishment, ethical considerations have to be given to its method of application. This paper seeks to provide enough evidence to steer the conversation on punishments and its methodology as well as the obvious relationship between punishment and cognitive performance in children.

2. Literature Review

The thought processing thus cognitively is not a one size fit all situation for children, children think in a very complex and a multidimensional fashion that has got many researchers in the area of cognition very fascinated and astonished for years. The function of punishments and rewards as well as its specificity on cognitive performance is very necessary and important in the process. In order for us to better understand this complex relationships in this process, there is the need to refer to extensive and varied collection of literature regarding the topic.

2.1. Effects of Punishment on Cognitive Performance

Numerous researchers have consistently looked and explored how punishment affects or impacts specifically the cognitive development of children, leading to an extensive multi-dimensional scientific reasons and conclusions that are based on different factors or variables. It is inevitable that some form of cognitive processes are needed to enable one to understand how the variable of punishment does affect cognitive performance among children (Talwar, Carlson, & Lee, 2011). There is the need for a further dive into the practice of executing punishment when it comes to children, this may range from wild or mild verbal reprimands to very sever physical punishment.

Corporal punishment has been at the top of all forms of investigations regarding and surrounding this topic. Long et al. (2020) described time-out as a prefered behavioral intervention that takes away access to reinforcement. On the other hand, studies have confidently linked negative cognitive outcomes with physical or corporal punishment (Cuartas, 2023). The findings from all these peculiar studies indicates clearly the relationship between heightened aggression and reduced cognitive capacities, this offers some level of proof of a possible consequence of corporal punishment.

Although some researchers argue that the negative effects of mild physical punishment may be an overestimation, meta-analytic evidence shows that even when controlling for other variables, physical punishment still has a seemingly weak but statistically significant negative correlation with cognitive development (Cuartas et al., 2020; Gershoff & Grogan-Kaylor, 2016). This immense contradiction emphasizes the need for more research into this area, especially when many factors control and instigate the variable called punishment, which does not exist in a vacuum.

2.2. Milder Forms of Punishment

Education and socioeconomic factors have led parents, institutions, educators and policy makers to opt for non-physical disciplinary methods. These methods includes timeout's, taking away certain privileges, soft talking children into acceptance of fault have all become very attractive and unavoidable forms of milder punishments. In a study conducted by Grogan Kaylor et al. (2021), it was concluded that utilizing these methods and strategies can in fact be very effective for two things, one is to self-regulate behavioral skills and secondly to enhance developmental outcomes in children (Grogan Kaylor et al., 2021). This in its self is not a rubber stamp recommendation, rather it is purely based on the regularity and suitability in implementation (Larzelere et al., 2010).

Punishment in its self is not entirely negative, rather the age of the child matters especially when developmental theorist insist on different ages of child as portrayed as having different stages of growth both cognitively and physically. Adding to that, the nature and severity of the punishment matters. Younger children in their early years react to punishment entirely differently in comparable to children in their teenage years and stage of development.

Cognitive development is not a static process, it changes with time and age. where different cognitive abilities appear at distinct stages and ages (Kail & Cavanaugh, 2016). It is very necessary to chose, design and implement disciplinary methods that are healthy and best for the child's age and in which their cognitive abilities can accept and respond to.

Genetics also does find its way into the picture of how a child's cognitive performance during and after punishment shows. Genetic traits like anger, temperament and cognitive abilities makes a difference and establishes a connection.

Lets use the variable of self regulation, children who posses the skill to better self regulate stress and pressure among others always perform better before, during and after punishment (Rothbart & Bates, 2006). These differences in traits adds another level of complexity in the relationship between punishment and cognitive development igniting the need for more research and a more thought through approach when punishment is administered.

2.3. Relevant Theories

Known and well thought through psychological theories provide empirical evidence to us better understanding the engineering behind the inherent relationship between cognitive development and punishment. Albert Bandura (1977) underscores in his social learning theory how behaviors are acquired through observation and imitation of others. What this theory is trying to imply is that behavior is learned and kids will use and imitate how punishment is applied and might see it as the appropriate world view for and of behavior there by having an effect on cognitive development.

Social Learning theory maintains that children experience and acquire behavior not because the behavior was applied on them but simply because they had the opportunity to observe, see it happen, learn and imitate the actions of people

around them. This can be seen play out so easily as rewards and punishment show up in the future. Each child who finds him or herself in the situation where for some reasons punishment has to be instituted, have two things happening. Firstly, they are at the end of receiving what every stimuli is given to them, and secondly they get to observe how the authority giving the punishment respond and behave when different punishments methods are given or carried out.

Another very interesting theory referred to as the attachment theory also find it's way into how punishment works with respect to cognitive development. John Bowlby (1969), factually believes that there is a very strong connection only with regards to ones emotions between caregivers by this he referred to schools, parents, hospitals etc., and the child. Attaching to a caregiver in its totality is not very relevant, how ever the quality of attachment is what matters. John Bowlby (1969) theorized that children form a develop psychological and affective bond with their primary caregiver (mother/mother figure), and this attachment is known to be important for existence, well-being and normal growth and development. While Bowlby stressed on the importance of the relationship itself, he also presented the view that the quality of the bonding thus whether secure or insecure, has a big impact on a child's future psychological and life outcomes. Children have different capacities to self regulate and sometimes are good in dealing with stress and other psychological deformities that come with punishment. All of these does have the ability to affect the child's cognitive development. The theory is whole heatedly based on whether or not attachment patterns will be affected by influencing or changing cognitive outcomes.

According to attachment theory, a stronger emotional bond between children and caregivers, thus if being secure will result and define appropriate trust and emotional support when it is needed. Obviously this can lead to and promote a sound emotional and cognitive growth and development. On the other hand, an insecure and weaker emotional attachment between children and caregivers can also result in a deficiency in cognitive growth in children (Bowlby, 1969).

The overall noise is that punishment in its self is not bad, but according attachment theories, how it is administered somehow affect the emotional connection between the child and the caregiver. When the punishment is applied or given out too severely, unexpected, without reason or regard, the child moves into the phase of not trusting, not being confident and feeling safe around caregivers. This is a disruption of a normal healthy bond leading to deficiencies in the cognitive development.

2.4. Identifying Gaps in the Literature

Consistent and modern literature as established the fact through empirical research and finding of the correlation between punishment and cognitive development. However not every variable or facet of issues relating to punishment and cognitive development has been covered both into details and in its entirety, meaning there are gaps present and it requires further studies. The most common error is the constant focus of studies on simply the relationship between punishment and cognitive devel-

opment, however there are many other factors and or variables that play a role in the cognitive development of children, some of these include the different styles of parenting, type and methods of punishment and the socioeconomic factors present at the time of punishment or when the punishment was instituted.

Cognitive development and growth, be it in a negative or positive fashion is gravelly affected and influenced by the style of upbringing or parenting. Where warmth and support is given to children under authoritarian or authoritative parenting combines especially with discipline which is very consistent, has indeed shown a stronger relationship or association with cognitive development and especially also with successes in school work. (Baumrind, 1991). These outcomes may vary with respect to culture and ones socioeconomic situation.

The variables surrounding socioeconomic thus including the environment in which the child is growing up in, does not just have an influence but an impact on the cognitive development of the child. There is enough empirical evidence through appropriate research that children who grow in very poor and economic impoverished environments are more likely to experience and or encounter red flags and road blocks in their development especially cognitively (Noble et al., 2015). A relationship exists between punishment and ones socioeconomic background, this hypothesis needs to be looked into.

In addition, extensive research has been very focused on specific punishment methods, mostly corporal punishment being the emphasis or the basis of this research. Obviously, there is the need for extensive studies into that, that should look into other methods or actions of punishment and examine how they affect a child's cognitive development.

Current literature in this area is very extensive but narrowly focuses on two things, punishment that is physical and non-physical. The emphasis has always been on corporal punishment, this does not seem to be very scientific because punishment is not simply an action but it covers a range from a low to a high, thus from it being mild to severe not forgetting other forms of manifestations through verbal forms, isolation which can last long depending on the severity of punishment, taking away rights and privileges from children and so on. Streamlining punishment into just one or two forms is a disservice to science and a more broader approach will be very welcoming, since all of these affect cognitive development.

Concurrently only a few studies have inculcated studying a group of people for longer periods of time especially where cognitive development has been called into question. This form of longitudinal studies is a great fit for encompassing and measuring development at the cognitive level there by understanding what might happen to each subject on the long term when punishment is given. Some major advantages includes being able to monitor and see how cognitive development either advances or retrogresses, and to be able to measure the changes over a period of time.

As it has been established through previous literature that punishment to a large extent has both some levels of advantages and disadvantages over a child's cognitive development, launching such a precise and long study will give the researcher

the opportunity to have at first hand how the different punishment types and methods affect a child cognitive growth over a period of time. Lets not forget that an individual goes through childhood, adolescent or teen ages and then adulthood. How do the changes of cognitive development work especially when the variable of punishment is eminent? At the end of it all, this studies aims to assist parents, policymakers and educators in providing some guidance into a better way for punishment to be carried out since its effects be it negatively or positively are real and very obvious be in now or showing up later.

The known literature available makes it clear to all who are interested in this area of studies the very complicated relationship sharing between punishment and cognitive development. In as much as behavior is learned through not forgetting imitation of behavior by children from a figure who is believed to have authority over them, its important to acknowledge that all of these merge to create an experience for the child, that forms the worldview and becomes a normal personal experience for and of the child alone. Through out this review we have come to understand that there are shortfalls hence the need for this studies.

Requiring and having first hand knowledge in this area of the effects of punishment on cognitive development, not only benefits the child alone but sets the ball rolling for a certain standard and also enforces the seemly undoubted relationship between punishment and cognitive development. Parents, families, educators and policy makers among others should seek and acquire knowledge in the most efficient and morally accepted punishment types and methods that embraces cognitive development of children and their well being. The dichotomy of the use of physical punishment, thus when pain is exerted on the physical body of a child comes to form part of our discussion and must be looked at or executed with caution. These not withstanding many others gives the researcher the yardstick to investigate and examine the methodology, results and the outcomes of this research.

3. Methodology

3.1. Research Design

In this research and detailed longitudinal research design was used to establish the relationship between the cognitive performance of children and different forms of punishment that was meted out to them over a six month period. Six months seem short but it gave the researcher the opportunity to look at and understand what happens to a child's cognitive development through assessment over a short period of time. Assessing children is complex, and multiple intervals gives the researcher the chance to understand the likely short term effects of different punishment actions that confers with the standards ste by Teti et al. (2026).

Longitudinal research is important in understanding the changes in ones cognitive abilities and development, The chosen methodology gives the researcher the opportunity to understand how the growth happens, thereby making it easy to understand and track the frequencies of growth, this is a very important factor

in researching into how punishment affects and or impacts the cognitive strengthens and shortfalls in children (Kang & Rodriguez, 2023) (**Figure 1**).

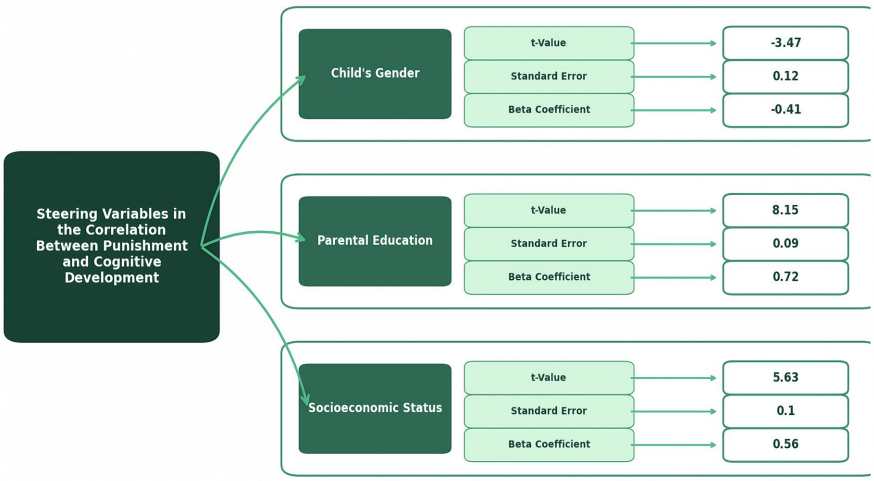


Figure 1. This graph shows the steering factors in the correlation betwixt punishment and cognitive development.

3.2. Participants

A carefully selected and varying sample of 100 children, ranging from the ages of 6 - 12 years old, who also came from various socioeconomic backgrounds participated and were part of this research. Bias was minimized through a deliberate selection process aimed at making sure that the 100 sampled children represented various part of the society as noted by Palinkas et al. (2015). Gender was also a key priority, with a balanced representation of sexes to guarantee unbiased cognitive development outcomes, as population variables like gender are critical when analyzing disciplinary effects (Gershoff, 2002).

The basis of the researcher reaching out to select a more diverse sample is simply due to the fact that there is the need for factors like the type of family, socioeconomic background, culture, and age of parents, among other important variables that have the potential to influence the subjects, to be curtailed and controlled in order that actual cognitive development can be measured (Palinkas et al., 2015). Having all this practical factors or variable that might pose a potential influence on the needed date in check, the researcher stands a better chance of understanding how these factors interplay in punishment and cognitive development.

3.3. Punishment Variables and Cognitive Performance Measures

To be able to assess the impact on, of or by using various disciplinary procedure or methods, this research will ficus on the following 4 Variables that are linked to punishment.

3.3.1. Time-Outs

Used as an alternative of a punishment method that does not require a physical

variable. This method in its applications employs a separation from a stimuli as the goal is to remove access to a kind of reinforcement (Long et al., 2020).

3.3.2. Removal of Haves/Rights

This punishment method includes or requires the enforcer removing objects the child values and sees as precious (example: toys or electronic devices) or taking away certain privileges (such as watching television or playing video games) with the main purpose of correcting bad behavior. Research has made it clear that "taking away privileges" is a known and accepted disciplinary method used by adults or caregivers. For example, in a national sample of U.S. parents, 41% reported using removal of privileges to discipline their children (Barkin et al., 2007).

3.3.3. Punishment with Words

This punishment methods requires the enforcer to use words in correcting wrong behavior, this might go from very mild forms like kind warnings to a perfect yelling and scolding method (Berlin et al., 2009).

3.3.4. Physical Punishment

A contentious and often disputed method of punishment, corporal punishment which involves the enforcer using physical force intended to cause pain, such as hitting or spanking, in order to correct behavior (Turner, 2002). These four variables were essential to this research as known methods of punishment that cuts across board.

The Wechsler Intelligence Scale for Children (WISC-IV) was used for this study to measure cognitive development across four domains (Wechsler, 2003). The WISC-IV was administered at two-month intervals over a six-month period. While this selected time frame exceeds the standard retest interval recommended in the technical manual, practice effects were considered in the interpretation of score changes (Wechsler, 2003) (**Figure 2**).

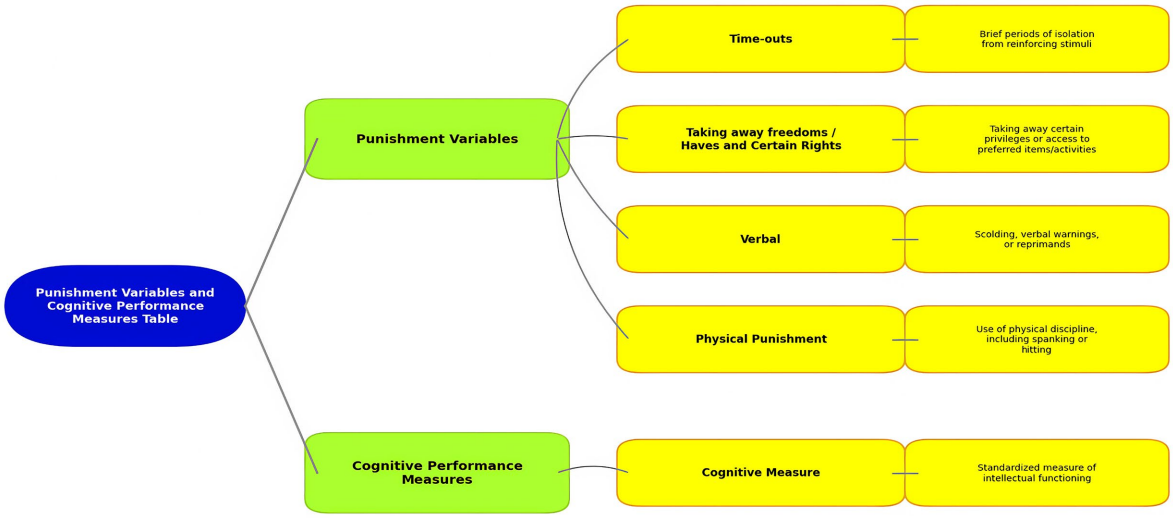


Figure 2. Flow chart representing punishment variables and cognitive achievement measures.

3.4. Data Collection Procedures

This research gathered data and carried out numerous evaluations at very concise or scheduled times or intervals. Data was collected from the sample prior to any variable being used, observed or administered with data being collected twice a month for a six month period. All of the required testing were carried out in very controlled settings to maximize outcomes and keep external factors that might affect cognitive development under control.

Using WISC at the personalized level during the evaluation period gave the researcher a deep insight into each sample or participants cognitive growth, retardation or development. Standardized questionnaires and interviews were used in this process during the data collection season. All samples or participants had parental informed consent given and sign before the research and data collection took off as standard practice.

Using standardized questionnaires was an immense advantage due to the fact that it gave every participant a consistent, validated measure for data collected each household or sample had to use the same form or questionnaire to report and consequentially it was used for data collection (Straus et al., 1998) (**Figure 3**).

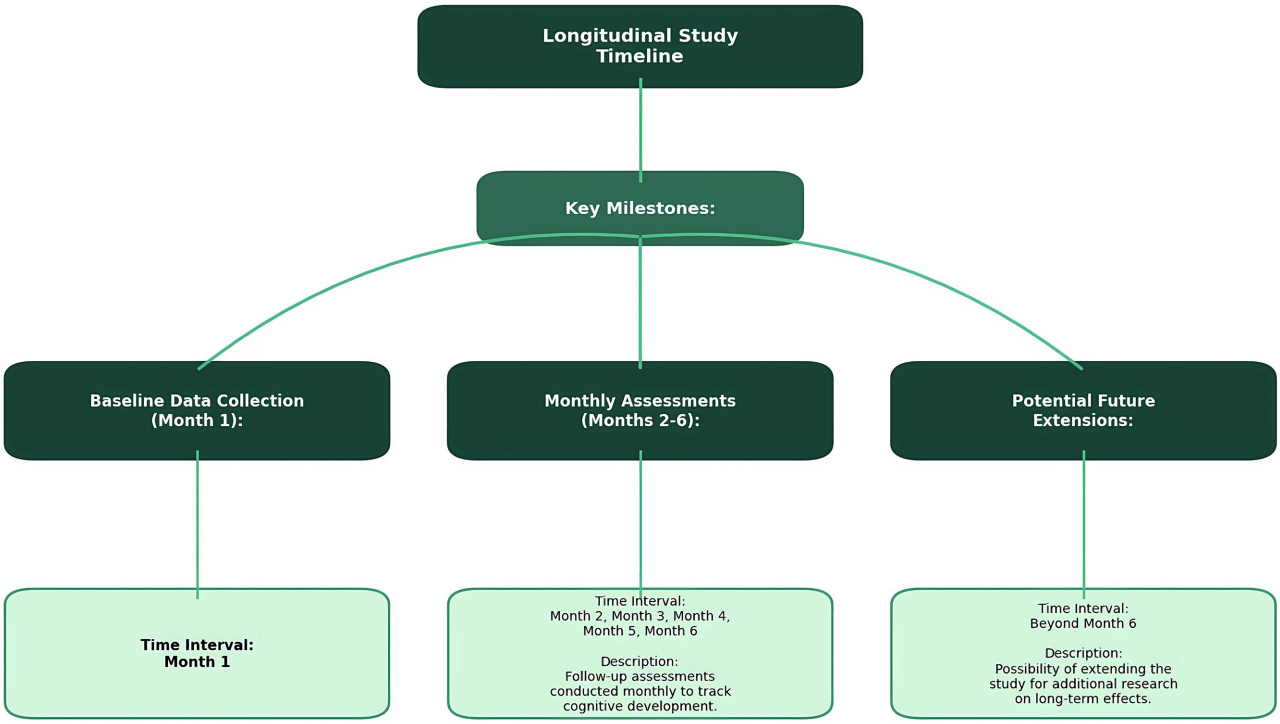


Figure 3. This flowchart shows the longitudinal study timeline.

3.5. Statistical Methods and Data Analysis Techniques

Rigorous statistical analysis was very key and important in the collection of data for the researcher to be able to arrive at certain empirical conclusions. This study was carried out to find out with empirical evidence the results, conclusions, the outcomes of punishment on the cognitive development among children over a

period of time using ANOVA. ANOVA was used as a statistical method due to the flexibility it gives researchers when instances of within subject changes sparsely over a period of time, thus putting into consideration the repeated measures of cognitive development and function.

A Repeated Measures ANOVA was selected as the statistical approach because it is the preferred method for analyzing changes in the same participants' cognitive development across different time periods (Field, 2013). This method gave the researcher the opportunity to examine how children's cognitive performance grew or retrogressed over the six-month period.

A follow-up test was conducted after ANOVA to figure out the differences that occurred using different punishment techniques. This helped the researcher to have a better understanding of how punishment variables had a significant cognitive effect on the sample. This enabled the researcher to analyze the tendencies of cognitive effects using different the punishment variables and to talk about the proportional gravity of their effect on the sample (Tabachnick & Fidell, 2019).

In this study the researcher used regression analysis to look into whether punishment variables or factors were correlated with attributes of the sample, including age, sex, gender, socioeconomic background, parental education level, and cultural context (Cohen et al., 2003).

Adhering to recommendations made by Pallant, SPSS a statistical tool was used for the analysis of data, as a software it was used to calculate and to better understand the complex data that was collected by the researcher (Pallant, 2020).

Very detailed empirical methods were adapted for the the purpose of this research, this gave the researcher the opportunity to draw a connection and understand the correlation between punishment and cognitive growth or development. The strict system of data collection and analysis coupled with all consideration given to all ethical requirements.

A number of factors played an important role in the design of this research, factors such as the different punishment types or variables, the parse and diverse sample size, participants, education standards, socioeconomic backgrounds and the different scales of cognitive development plus the kind of statistical analysis assisted. To be able to analyze properly the relationship between cognitive development and punishment, methodology for this process should be scientific and data driven.

3.6. Analysis and Implications

The researchers choice of employing these kind of methods in its sense was a great fit for the application and usage of longitudinal studies. This paved the way for the researcher to be able to observe all needed variables like punishments variables as well as observing the outcomes as it shows changes cognitively over a period of time. The exposure to such raw data brought about a deeper understanding of the differences in disciplinary methods and its implication, notably bring to light all its short-comings in the immediate future. The main idea was to understand if and when punishment is given out, do the effects stay for a long time or a short

time? thus working within the time-line of this research.

Diversity among the sample of 100 children was selectively diversified and made sure that all variables were seemly present and error minimized. Socioeconomic factors, population features influenced the results of this research. Diversity and consistency in research is important, these two things can assist in generalizing the findings to a wider population.

Punishment variables are many, however this research streamlined them into four, mainly because these punishment variables can be tested and be collaborated to cognitive development. WISC was selected to ensure validity, reliability and consistency in the research findings. To an extent punishment was spread across a spectrum of intensity making measurement possible.

Data collection for everyone in research is cumbersome and stressful, this research was not an exception. For this research questionnaires, parental consents to ensure that the research was within a certain ethical boundary, a very controlled evaluation were employed. All of these were done to minimize errors and biases in a bid to achieve a perfect set of data for analysis.

The type of statistical method, preference for data analysis were all a contributing factor towards the accuracy of the results of how punishment as a variable influences a child's cognitive development. ANOVA and pretesting of variables as well as selecting a long term research style, collecting data over a six-month period gave the researcher the opportunity to see a variance in data especially with the correlation between punishment and cognitive development. The predictive models also helped in this process.

4. Results

4.1. Effects of Consequences on Cognitive Capabilities

This section delves into the results of this research. The big catch was on how various punishment variables affect either positively or negatively cognitive growth over the estimated period of time. As the research was designated for six months and strictly working with a sample of 100 participants.

4.1.1. Time-Outs

Research subjects who were exposed to time-outs demonstrated a high mean values in IQ points ($p < 0.05$) of 6.8, exhibiting a meaning gain or advantage in cognitive ability or resources over the duration of the study.

4.1.2. Taking Away Freedoms/Haves and Certain Rights

Using this variable in this research as a method of executing punish was astonishingly positive and cognitive growth went over the roof over a six month period. The data showed that there was an average growth in IQ of 4.2 points ($p < 0.05$).

4.1.3. Using Words as a Punishment Variable (Verbal)

The research participants who used words or verbal forms of punishments demonstrated a slight increase of IQ point of 3.1 ($p < 0.05$) as their level of cognitive growth within the research period.

4.1.4. Physical Punishment

Interestingly, using physical punishment was very disappointing per the research data. It showed a very minimal growth in the children's cognitive development of only an IQ 1.5 points ($p < 0.05$).

The above shared results shows a s very strong correlation between punishment and cognitive development, however we can see the growth is IQ subsequently affecting cognition when the children received punishments that are related to taking away haves or rights and certain freedoms (Figure 4).

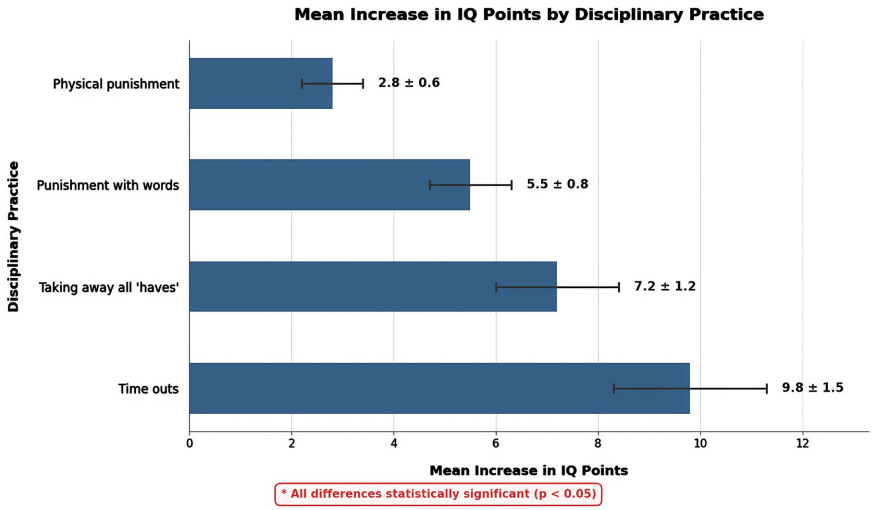


Figure 4. This table is results table: Impact of disciplinary practices on cognitive performance.

4.2. Statistical Analysis

In order for the researcher to properly understand and asses including analysis the behavior and especially cognitive growth and development of the sample or participants, ANOVA was selected as a measurement methodology. Withing the data analyzed, all p values stayed below 0.05. This means that there is a statistical significance present. What it means is that, these is a relationship between punishment and cognition or cognitive development when observed and tested. This helped to consolidate the results of this entire research.

4.3. Illustrating the Results

For a proper understanding of this, refer to Figure 5 below, in this figure the changes that occur thus in relation to the type of punishment variable is shown as the study continued over the sic-month season.

4.4. Discussion of Results

The data represented through the observation, collection and analysis stage of this research indicated that there is an definite correlation between punishment and cognition or cognitive development within or during the six-months that the study was carried out. This undeniably restores the needed caution and role that

parents, educators, government and all who are within the scope of having a certain form of authority over children and especially when these mentioned have the power to give punishment must not only embrace, but understand the ramification of their actions on the cognitive development of the child be it positively or negatively.

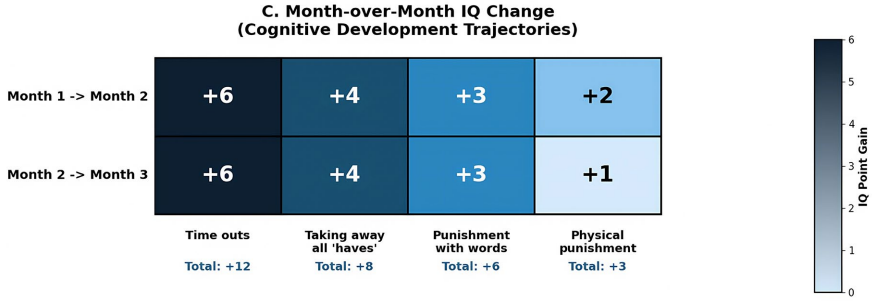


Figure 5. This chart visually represents how each disciplinary practice influences the cognitive development of children over the six-month period. It is evident that Time-Outs and Removal of Privileges lead to more substantial and consistent cognitive improvements.

Obviously without any biases, the research data pointed out to better IQ score among children with milder forms of punishments like time outs and any other form of punishment that did not require harming the body physically. All variables tested in this manner showed and increase in cognitive development. This not withstanding other methods like using words (verbal), taking away the child's "haves" as well as taking away the freedoms of the child, all showed a significant growth in IQ acquisition. At the end of the day, all punishment variables that did not require physical variables like hitting the child and so on was positive on the level of cognitive development.

Culturally among a certain group of people who might be condensed into a certain level of socioeconomic standard. Physical punishment might come with certain advantages. However its been proven that, its assistance in cognitive growth or development is very insignificant and should be carried out with caution or be discontinued totally.

The outcome of this research emphasizes on the need for the appropriate form of punishment to be chosen when and during addressing issues that are related to behaviors that have to be corrected. The main reason for the need to exercise caution is so that cognitive development will be first of all protected, preserved and or developed. There is the need to effectively chose the most appropriate method referring to the need for more or further studies into the use of punishment methods that do not require hurting the physical body.

Statistical methodology plays an important role in analyzing each research data where as working towards consistency and accuracy. This research was not an exception, ANOVA was used in recurring measurements, there were changes that happened with some research participants at different times during the research. The aim of capturing the correlation and influence of punishment on cognitive

growth was achieved more precisely. The growth experienced in cognitive development was pretty much attributed to the kind and type of punishment variable selected and not due to an absolute probability. This was illustrated and cemented by looking the the p-values thus less than < 0.05.

4.5. Implications

The results and outcome of the research is not just an academic exercise but goes a long way to dictate how stake holders on children development like educators, parents, and government institutions ought to consider the variables of punishment especially when and where children are involved. This research roots for the use of punishment types that are not physical and would not hurt the body of the child, rather punishments like taking privileges away, timeouts, and the use of words to serve as a means of correcting the child's behavior was and is paramount to promoting the child's physical growth, enhancing good behavior and achieving positive cognitive development.

This research recommends that stakeholders in children development be it parents, educators and policy makers should very restrictively consider punishment variables that are not physical in nature. This is believed to have the ability to promote the child's cognitive development. Further more, there is the need for some of sensitization that will be directed at parents and all stake holders who have cognitive development of children at heart, to try and enforce a non-physical punishment method and be educated on the benefits it carries.

Furthermore, this research brings to bare the need for all factors and resources committed to the development of children and especially where children are punished or does have punishment as a method of regulating children's behavior should at all times inculcate and select the most appropriate form of punishment that does help restore the child's behavior to the appropriate norm and also enhance cognitive growth or development and not vice-versa (Figure 6).

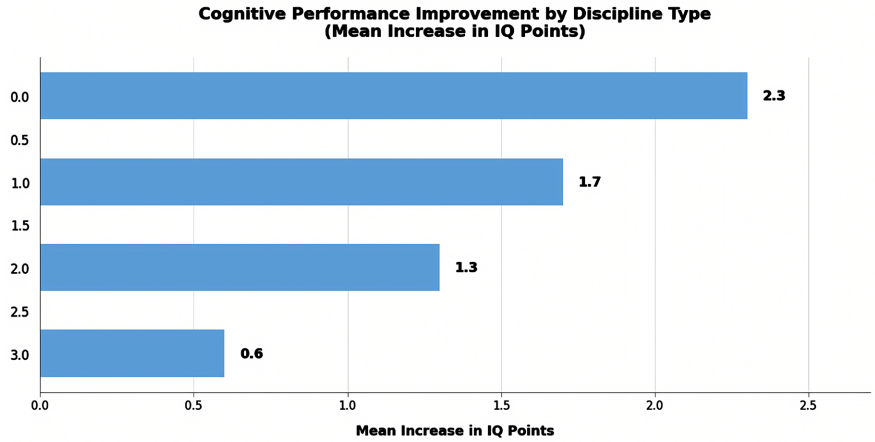


Figure 6. This chart vividly illustrates the varying magnitudes of cognitive improvement associated with each disciplinary practice over the six-month period. It is evident that Time-Outs result in the most substantial cognitive gains, followed by Removal of Privileges, Verbal Reprimands, and, to a lesser extent, Corporal Punishment.

5. Discussion

5.1. Interpreting Results

The results and outcomes of this research gives a positive perspective around the topic and interest of the correlation between the kind of punishment methods used and the how far cognitively the child can develop. In order that we fully fathom the outcomes, there is the need to draw in assessments by looking at the dilemma of the effects of punishment on cognitive development among children.

In as much as children are growing up in different institutions, they fall within the society and every society has its own systems of punishments and rewards. The fact has been established through the data collected and analyzed that punishment to a very large extent has an influence on the cognitive growth of a child. As demonstrate by the use of several other forms of punishment, different levels of cognitive growth was seen in the children. There are also advantages to the use of certain punishment types since they helped the children to grow cognitively whiles other showed a complete decline in cognitive development. This issue is not in black and white and obviously there is a possibility of other probable variables that might challenge our world view.

5.2. Implications for Understanding Punishment and Cognitive Performance

The welcoming effects of the loss of certain rights, timeouts, taking away all haves, using verbal or words to replace punishment variables does bring to the forefront the need for punishment methods that are not physical in nature and do not hurt the body of the child. These methods does help the child to become better cognitively and grow or develop. This research agrees with previous research that emphasizes on the need for non-physical methods of punishment as a champion for cognitive growth and helps the child to master self control. (Grogan Kaylor et al., 2021; Smith, 2004; Vrantsidis et al., 2025). The purpose of punishment is to correct a certain behavior and not just to punish. Policy makers, educators and parents should carefully select and consider all forms of punishments and chose one which does benefit the child, especially where cognitive development comes into question.

Interestingly the use of corporal punishment where punishment is given to the child by hitting or hurting the physical body of the child did show a very small growth in cognitive development, extra precaution will have to be taken when employing such methods. Other punishment methods have been shown to be more effective and those methods bring about cognitive development. These are mainly the non-physical methods of punishment.

There is significant evidence and disagreements on the effects of physical punishments on a child's well-being as well as the child's cognitive growth (Gershoff, 2002). In this research, findings have concluded that corporal punishment has very little effects on cognitive growth. How ever as a punishment variable available, there is the need to encourage further studies in this area especially where the

child's mental and or psychology is called into question.

5.3. Limitations of the Study

This research has brought to fore the importance of punishment types and its effect on cognitive development. However, there has been some limitations that needs to be addressed. One such limitation was looking at punishment at the individual level there is the need to go further into looking at the relationship of many other factors such as the individual parents ideas on child-bringing which is different from the know mainstream methods. There is also the likely-hood of other external factors that are capable of shaping the results of cognitive growth. Having all these factors engineered into a research will seemingly enhance and establishing a more concrete evidence of the effects of punishment on cognitive development.

However, the importance of this research to look into all variables related to punishment, that possibly had an effect on cognitive development was very important, having an extended research that had the probability of observing these children for a much longer period of time would have been more appropriate as the children matured into their teenage years eventually leading to adult hood. This prolonged investigation will not only help deepen the understanding on how long the cognitive development lasts. But would also give the researcher more insight into developments that are either linked or created from this initial cognitive development.

5.4. Future Research Opportunities

This empirical studies only considered a few variables of punishment and looked at them and how it affects a child's cognitive development, considering other factors like who the parents are, the kind of educational background they have, their socioeconomic statuses in society. However, a bit more could be done with a combination of hypothesis and a combination of punishment variables and consideration given the relationship that might exist between punishment variables and cognitive growth over a more extended period of time.

The research results showed certain relationship between punishment and some forms of punishment variables administered. There were growth in some situations and a decline in some variables administered. Some results showed a complete negative result. Example is with the use of physical or corporal punishment. The question of what the lasting effects are with these forms of punishment is a potential for investigation. Also, teachers, parents and policy makers can be included in the entire design of any future research endeavor. That way its finding can be all inclusive and more accepted and applicable.

5.5. Ethical Connotations

Ethical consideration were taken very seriously especially because children were involved. The findings of the other punishment variables were encouraging with

the exception of the use of physical punishment, this means that the kind of punishment method selected and used by a power over the child does affect the child both positively and more negatively. This draws an emphatic line between what is deemed right punishment and what is deemed wrong punishment. Certain methods like taking away "haves", timeouts and so on are seen to be a more responsible choice over the use of violent punishment methods that affect cognitive development more negatively.

Individuals who are responsible for reprimanding children should take a lot into consideration when choosing a punishment method. The need to promote cognitive development should be the top priority of all stake holders, including consideration given to a balance of the child's emotions. This should be seen as a responsibility and not a choice.

This study establishes the concrete relationship between punishment and cognitive growth. The kind of cognitive outcomes gravely depended on the type of punishment method in this research setting. This in fact indicates that educators, stakeholders, parents and policy makes have to make it a priority and a matter of importance in selection of punishment for children, knowing that it will and does have an effect on the child's cognitive development. Each punishment method selected should be ethical because there are consequences.

This researches data implies that the use of other kinder methods of punishment such as timeouts among others, has the inevitable higher probability of correcting and lowering problems associated with wrong behavior, vis-a-vis promoting good behavior and cognitive behaviour. These mentioned strategies will and should serve as a yardstick in the selection of punishment methods.

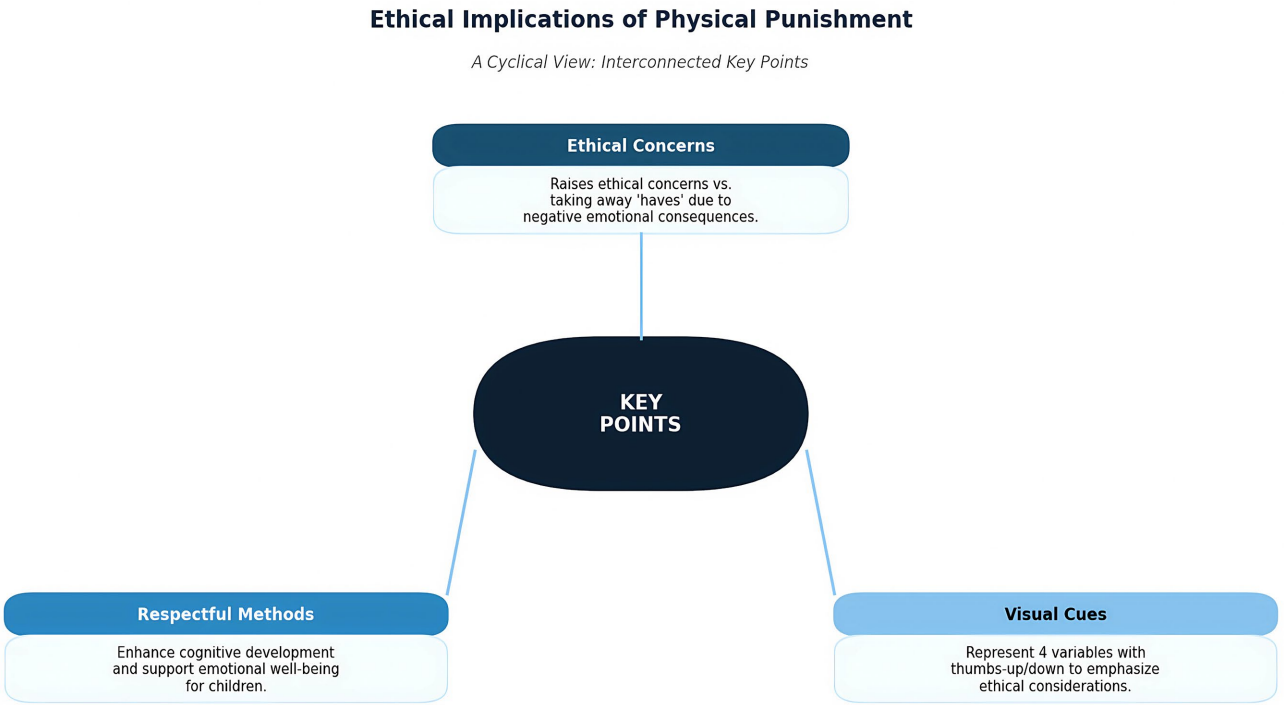


Figure 7. This info-graphic shows the ethical implications.

Physical punishment resulted in very low cognitive growth, since certain societies and stakeholder hold the worldview of the importance of these forms of punishment. Extreme caution should be taken and if possible a complete ban in all sectors and areas of a child's life, simply because it doesn't enhance a very positive form of behavioral change and or cognitive growth. There is enough research that informs and cements the need for non-violent forms of punishments, when it comes to behavioral and punishment issues among children (**Figure 7**).

6. Conclusion

To a large extent every parents, educators and policy makers have as a priority that children will develop not just mentally, physically, psychologically and emotionally but most important their cognitive growth. This is one of their top most priority in all the stages of development in a child. This important growth periods, are one of the important stages that has to be set right for other forms of development to happen, hence the need for an exceeding attempt to encourage cognitive development by all mean necessary. Thus the reason why punishments and its different types matter.

This detailed empirical study looked at the relationship between punishment and cognitive development among children for a period of six months, The research has brought to light an in depth understanding and analysis through data, of how indeed punishment of a certain kind does have an effect on ones cognitive development either positively of negatively depending on the type of method chosen. Without a doubt, among the punishment variables chosen for this research, it was clear that using methods like time outs, taking away "haves" and so on with the exception of the use of physical punishment, establishes the efficacy of these ways in dealing with personal bad behaviors as well as increasing ones academic fortunes in the process of personal development.

On the contrary physical punishment, otherwise known as corporal punishment, from the data indicated a very small or minimal growth in the children cognitively, vis-a-vis the use of other methods that are not physical. Through this consolidation, there is the need for questions to be asked as to whether physical punishment should be used at all. Bringing into question the efficacy of this method of correcting behavior. Taking these findings into consideration, its very paramount for all stake holders to properly consider the right punishment variable in order to protect the child's emotions and the entire world view.

There are many occasions that parents, educators and policy makers are much more concerned of and about the end results which is having the child's in appropriate behavior corrected but consequently the negative aspects of the use of the wrong punishment methods are not factored into the process, leading to an eventual cognitive retardation of the child. Using more friendly or a non-physical method has shown that its benefits are enormous and can in fact stop inappropriate behaviors in their tracks and also enhance cognitive development. Punishment is not just a tool but a skill that has to be learned and applied well.

To summarize this, this research has brought to light the importance of selecting the most appropriate punishment method for parents, policy makers and educator, bearing in mind the word COGNITION. The relationship between punishment and cognitive development has been established and its intricate. Every punishment decision should be ethical and considerate. Its inevitable for all and sundry to consider the use of non-physical forms of punishment since those methods not only guarantees some form of cognitive growth but also brings onboard the child's emotional development.

Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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