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Our literature search into childcare how are the children doing?



Brainwave Trust Educators are almost always asked about childcare. Is it good for baby/child? When's the best time to go back to work?

Written by: Keryn O'Neill and Sue Younger

Brainwave Trust Educators are almost always asked about childcare. Is it good for baby/child? When's the best time to go back to work? "Weeee...ell...", we all say, followed by a deep intake of breath, "...it de...pends...." The evidence is so difficult to understand. There are so many 'agendas' at play. Economic agendas. Workforce issues. Gender agendas.

It's awkward to even talk about this these days. In some circles, it's assumed that both parents will be back at work as soon as possible. In other circles it's frowned upon for babies to be in any non-parental care, and working parents feel judged.

There's a tendency to feel defensive because our thoughts immediately go to what arrangements we made/make for our own children. Childcare professionals can feel defensive, too. They work hard, and in a very professional manner, often for low pay and not much status.

Many caring, well-informed parents feel totally confused. And the most delicate, difficult thing that makes it hard to talk about is that some families have limited or no choices. If you're a single parent and you don't want to struggle along on a benefit, or your family needs two incomes just to pay for food, shelter, power etc. of course you have to find some affordable care for your children while you work. And we are all too aware that some parents can't afford even the cheapest care. So they work horrendous shifts, take their children to work, don't get to sleep, whatever it takes. Everyone is juggling.

We certainly don't want to make any parents feel guilty. If families are economically (or for any other reasons) unable to make decisions that are best for their children and themselves, then that's a problem for all of us. That's an issue for the "system" and we need to look at all the possible solutions: longer paid parental leave, flexible working hours etc. It is not helpful, nor desirable, for parents to feel guilty.

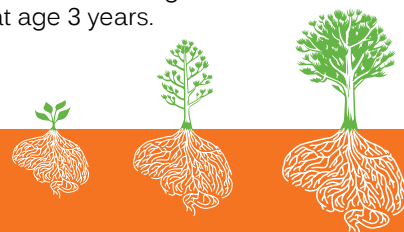
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Nor is it helpful or desirable for us to 'fudge' information for fear of making parents feel guilty. We're all in this together, and we all want what is best for children. We know that almost all parents out there want to do the best by their children.

Which is why they deserve good, honest, as-objective-as-possible information.

So over a two-year period, Brainwave Trust has conducted a literature review to see what is known and what is not. There's been input from psychology, from public health, from neuroscience and from education. We've looked for evidence and tried our hardest to be objective and fair. We've made sure that, where possible, we went back to the original studies. The result is a document we are very proud of.

It's a pity kids and families don't come in one shape and size; it would be so much easier to find answers. And Early Childhood Education or Daycare - whatever you like to call it - doesn't come in one shape or size either. It's not just one thing. It's a whole lot of things. There's part-time care, full-time care, informal care, centre-based care, home-based care. There's care starting at six weeks of age, and care starting at age 3 years.



These things can make a lot of difference. An awful lot of studies focus on just one sort, or one age group. Centre-based care is the easiest to study, so it seems to be studied the most. Children younger than three have been studied a lot less, as their participation in out-of-home care is relatively recent. The studies we found only rarely looked at parental vs. non-parental care. A lot looked at what “high-quality” care may look like and how it compared with “low-quality” non-parental care.

All this variability in care makes it hard to generalize and hard to use terminology. For the purpose of this summary, we have used the term “childcare” to denote any non-parental care. This can range from individual care in a home by someone other than a parent (e.g. home-based caregiver, nanny, au pair) to centre-based care. (Our literature review paper makes distinctions wherever possible.)

A lot of the studies, of course, are overseas studies. Because research is expensive and difficult, there is a scarcity of local research.

It's vital that we all take into account that these studies look at ‘averages’ and ‘means’, ‘increased risks’ and so on. None of these things mean that *individual* children will necessarily experience any of these harms or benefits – it's simply that they are more likely, or less likely to. Also, sometimes individuals may be affected in a big way, even though the average effect in their group may be small.

We're never going to come up with a simple answer. Each family makes the decisions they feel are best for their situation, weighing up all sorts of factors.

One thing we do know, though, is that these early years are important. The majority of brain development occurs from conception to age one and continues at a rapid pace through the first few years. Very young babies learn to respond to the world through their relationship with their caregivers. The way they are responded to as babies can affect their ability to successfully engage with others and to manage life's day-to-day stressors.

We know also that certain life experiences increase risk and others act as protective factors. Every child has a unique set of factors, and outcomes are a result of complex interplay between genes and experience. Risk factors only increase the risk of poor outcomes; they do not determine poor outcomes. Similarly, protective factors only increase the likelihood of good outcomes. Risk factors are cumulative; one risk factor in a child's life may only slightly increase the risk of poor outcomes, however three or four in combination will elevate risk significantly.

So, in this context, we managed to tease out a few questions we wanted to look for information about. What follows is a very simple summary of our key findings in relation to those questions. The full literature review has far more in the way of caveats and explanations and references. It captures the subtleties and the “it depends” so crucial in this kind of work.

Do children who have been to *childcare* do better at school?



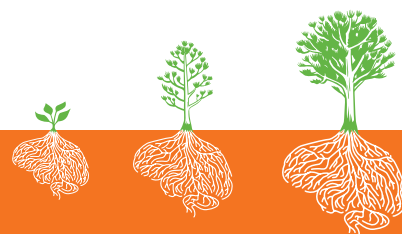
Background

“Doing well” at school is complex. Children vary greatly, and there are many areas to consider: social and emotional well-being, ability to learn, “fitting in” are just a few.

In this section, we were interested in cognitive gains. Cognition is an umbrella term for certain aspects of intelligence, such as language, attention, memory, planning, decision-making, social skills and impulse control.

Testing cognitive skills is notoriously difficult, especially with young children. It is important to note that many studies test language only and not overall intellectual ability. Psychologists rarely make conclusions about a child's intellectual ability until they are much older (at least 6 or 7 years), as earlier development is in a state of flux. Assessment at this age rarely predicts long-term ability.¹

¹ H. Vykopal, personal communication, November 23, 2014



Findings

There are lots of conflicting studies as to this one. What we were able to find was:

- Parenting has a greater influence overall than childcare.
- Some studies indicate cognitive benefits. This is most often when the children are attending high-quality childcare at 3 or 4 years of age, rather than at younger ages.
- Where there are cognitive benefits, they may not last long after starting school. (It has been speculated that this is because children from childcare centres come in with certain “skills” that help when sitting tests, e.g. sitting at a table and taking instructions from someone they don't know. It may be that other children ‘catch up’ on these skills.)
- If children attend long hours from very young, some studies suggest they may do worse at school.
- High quality childcare is better than poor-quality, but is very difficult to compare with parental care.
- Children who attend childcare are more likely to come from families with greater income and higher parental educational levels which are in themselves predictive of more positive achievement outcomes. It can be difficult to disentangle the impact of these factors from any impact arising from childcare itself.



Can childcare affect children's behaviour?



Findings

- There may be increased risk of negative behaviour which can last, if children attend childcare, particularly before one year of age. It's important to note, here, that we are not talking diagnosable behavioural disorders. Different studies look for different negative behaviours but the sorts of things that crop up are aggression, hyper-activity and not doing what you're told.
- Care beginning in the first year of life and occurring for more than 20 to 30 hours each week was associated with increased aggression and non-compliance when children were 3-8-years-old.² It seems that the combination of “early, extensive and continuous care” posed the greatest risk.³
- Belsky's findings have been replicated by a number of others, and despite differences in childcare provisions between nations, similar results have been found in several countries.

² Belsky, 1986, cited by NICHD Early Child Care Research Network, 2003

³ Belsky, 1994; Belsky, 2001, cited by NICHD Early Child Care Research Network, 2003, p. 977



Does childcare cause children stress?

I've heard their

cortisol levels rise?



Background

Researchers have often used levels of the hormone cortisol as a measure of the physiological stress of children.

This is really complicated. We produce cortisol all of the time, even when we are resting. It's the **patterns** of cortisol that researchers tend to look at, i.e. the way in which levels change over the course of the day.

Cortisol levels are usually highest shortly after waking, enabling us to get going for the day, decrease sharply over one to two hours, then decline more gradually over the rest of the day.⁴

Even babies tend to follow this pattern⁵, with the decline from morning to afternoon cortisol levels occurring more reliably in children from around 3 years of age.⁶

Both real and perceived threats to an individual's physical or psychological safety result in the 'stress response',⁷ which involves a number of hormones and neuro-chemicals, including cortisol. When cortisol is released quickly and then promptly turned off it activates the immune response and mobilises energy stores, helping the body and brain to cope with adversity.⁸

However, prolonged cortisol elevation can have a negative effect on certain regions in the brain, particularly those involved in memory and learning. Very young children's brains are thought to be particularly vulnerable because they are developing rapidly.

Findings

- In most cases research finds that children's cortisol patterns on childcare days differs from patterns on non-childcare days.⁹
- These effects are more likely when attending full-day childcare and not when children attended only in the morning.
- Younger children, around 2-3 years of age, are more likely to display altered cortisol patterns in childcare than older children.
- Among infants, even when they outwardly appear to have adapted to their childcare arrangement, cortisol levels have still been found to be higher 5 months later.¹⁰
- Research in other areas indicates that stressors occurring over a prolonged period of time are typically found to have adverse effects on children's development.¹¹
- However, the long term implications of the particular cortisol alterations associated with childcare attendance are unclear.

More research is needed to increase understanding regarding the nature and extent of altered cortisol patterns associated with childcare attendance and their long-term implications.

⁴ Bruce et al., 2013; National Scientific Council on the Developing Child, 2012; Tout et al., 1998; Watamura et al., 2003

⁵ Bruce et al., 2013; Ouellet-Morin et al., 2010

⁶ Bernard et al., 2015

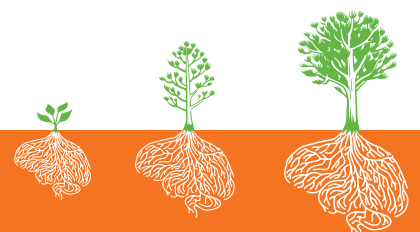
⁷ Levine, 2005, McEwen, 2000, cited by Bruce et al., 2013

⁸ National Scientific Council on the Developing Child, 2005/2014

⁹ Bernard et al., 2015

¹⁰ Ahnert et al., 2004

¹¹ Gunnar & Donzella, 2002, cited by Groeneveld et al., 2010





What about *relationships* with parents?

How are they affected by childcare?

Background

A child's attachment relationships are considered important for many outcomes, including language development, emotional development and cognitive performance.¹²

"Infants with secure attachment relationships are confident in the sensitive and responsive availability of their caregivers, and consequently these infants are confident in their own interactions with the world".¹³ On the other hand, infants who have not had consistently responsive caregiving are likely to lack the "confidence in themselves and mastery of their environments" of securely attached children.¹⁴

Findings

- Attachment security is more at risk for infants in childcare in their first year of life; this risk appears to be heightened when occurring alongside other risks, such as lower maternal sensitivity, or attending poor quality childcare. As with any other risk factor, it is important to note that adverse outcomes do not occur for all.
- Some of the protective effect of secure attachment with the child's mother was lost when childcare began at an early age.¹⁵
- Fulltime childcare increases the risk over and above part-time childcare.
- For children with insecure attachments to their parents, and other risk factors in their life, there may be some benefits in attending childcare.

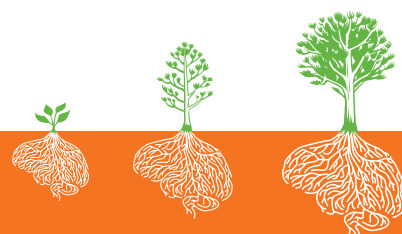
Further research is needed to determine at what age attachment security is not likely to be at risk from attending early childhood education, and for what amounts of time.

¹² Pianta et al., 1997

¹³ Weinfield et al., 2008, p.79

¹⁴ Weinfield et al., 2008, p. 80

¹⁵ Egeland & Hiester, 1995



Is full-time or part-time better? And at what *age* might children benefit?

Background

Some children start routine non-parental care shortly after they are born, and others not until they are 3 or 4, if at all. Some are in care on a fulltime basis, whereas others experience care only part-time.

It can be difficult to disentangle the effects of the length of hours in care from the age children start being in childcare, with most research reflecting their combined effects.¹⁶

Findings

- The longer the hours of childcare, combined with the earlier age children start, the risk of poorer outcomes increases.
- There is no evidence for a particular “threshold”. It’s more like a ‘the longer the child attends and the earlier they start, the more effects you see’ model. This is sometimes likened to the “linear dose-response relationship” effects of a drug in biology.
- “....as quantity of care increased, so did problem behaviour”.¹⁷ Belsky initially reported on the adverse effects of “early, extensive and continuous care” in 1986.¹⁸ Since then, a number of other studies have been conducted which support these earlier findings.
- The impact of extended periods of time in childcare “is consistently viewed as a risk for the under 2 age group”.¹⁹

Does the *"quality"* of childcare matter?

Background

Much research includes reference to high quality childcare. The components of “quality” include factors such as teacher pay, teacher qualifications, teacher to child ratios, and the quality of interactions between teacher and children.

It is worth noting that, given the relatively recent phenomenon of infants and toddlers in childcare, much of the available research about quality relates to 3 and 4-year old children, with much less known about quality for under-two-year-olds.²⁰

Findings

- As others have found, the studies reviewed here indicate that “toddlers and pre-schoolers in good and excellent childcare have better outcomes than those in mediocre or poor childcare in many different areas”.²¹
- Quality of childcare is most important for those who are vulnerable, but they are less likely to access it. Like many aspects of early care, risks are cumulative. Children attending poor quality childcare, and coming from environments of heightened risk, are particularly likely to be adversely impacted.



¹⁶ Mathers et al., 2014⁴

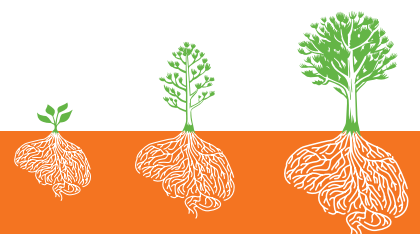
¹⁷ Belsky, 2007, p. 12

¹⁸ Belsky, 2007, p. 4

¹⁹ Carroll-Lind & Angus, 2011, p. 2

²⁰ Dalli et al., 2011

²¹ Howes & Brown, 2000, cited by Mathers et al., 2014, p. 14



Is it better to have *one arrangement*

that stays the same? Does it matter if we keep changing our arrangements, depending on our needs?

Background

We know that relationships are hugely important for child development, particularly in the early years of life.

Instability of care can result from staff changes, a child moving from one childcare setting to another over time, and/or having multiple non-parental arrangements in place at the same time.

When making decisions, it may be useful for parents to know that stability can matter. Like everything else, instability can simply increase risk.

Findings

- For children attending childcare, those with stable care are likely to do better than those experiencing changes in their non-parental care.²²
- Adverse outcomes can be seen in terms of children's physical health as well as social and behavioural wellbeing.



Can childcare *improve* life outcomes

for children who are vulnerable because of family circumstances?

Background

While there are other things that make children vulnerable, much of the literature we have looked at is about children growing up in poverty.

Children who endure poverty in their early years are much more likely to experience delays in a number of areas, especially cognition, language and social-emotional development.²³

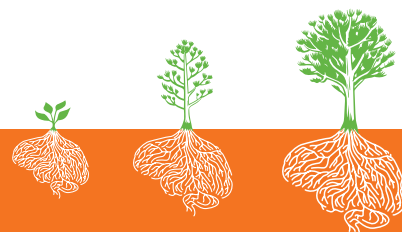
This can all be complicated by the fact that it is more difficult for poorer families to access high quality care for their children, if they are using childcare.

Findings

- Few studies compare the effects of childcare with parental care.
- The studies looked at by Brainwave do not provide strong evidence that childcare improves outcomes for vulnerable children. While there are some indications that they are more likely to benefit from high quality childcare than their peers, there is little evidence to indicate that any positive effects are long-lasting.
- Benefits tended to relate to children aged 3-4 and not to those below age 2.
- Where there are benefits, these decrease, but do not close, the achievement gap between vulnerable children and their more advantaged peers.

²² Ansari & Winsler, 2013

²³ Ansari & Winsler, 2013; Bridges et al., 2004; Burger, 2010; Domitrovich et al., 2013



Does society benefit

if more children are in high quality childcare?

Background

The more we understand about the importance of early childhood development, the more governments and communities want to invest in it. This is a good thing. There is a search for tangible things to implement, and there are a lot of reports as to the benefits of quality early childhood education. Well-intentioned people are advocating greater participation for all children, but important subtleties such as starting age and hours of care and quality can get lost in these conversations.

Much of the writing about the benefits of childcare draws upon a small number of studies of multi-faceted early interventions for vulnerable groups, which have childcare as one component. Many report long term benefits for at-risk children in terms of health, cognitive development, and school achievement.²⁴

The problem is, these findings are sometimes used to promote childcare for ALL children, and without the accompanying interventions, such as home visits and parent education, which may, in fact, have been the crucial components.



Findings

Three particularly influential examples of these early intervention studies are 1) the Perry Preschool project, (2) the Chicago Child-Parent Centres, and (3) the Carolina Abecedarian Project.²⁵

Our paper describes each in detail and draws conclusions about their relevance to our task. But, in summary, some things about these three studies that we think are important to consider are:

- The interventions were multi-faceted, involving components such as parent support and health services, of which childcare was but one.
- The childcare component was of higher quality than typically available care, including teacher pay, teacher qualifications, teacher: child ratios, smaller groups.
- The care was part-time. For the majority of children (those in Perry Pre-school and Chicago Parent Centres), the childcare component was 2.5 - 3 hours per day for the school year.
- A majority of the children were older. In the Perry Pre-school and the Chicago Child-Parent Centres, the children attended when they were 3- 4-years-old.
- Many of the children in the control groups (those children not receiving the intervention and used for comparison) were attending typically available childcare. Thus, these studies demonstrate that attending very high quality childcare which includes health services and family support contributed to better outcomes than typically available care. None of this is relevant to discussion of non-parental vs parental care, as this comparison was not done.

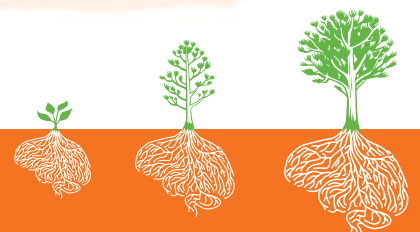
Summary

The frequently repeated reports of lasting benefits regarding education, employment, reduced crime, and associated economic benefits, are **not** attributable to the type of childcare which is typically available, or even high quality childcare. They are attributable to multi-faceted early interventions for at-risk children that included parenting intervention and health services, in addition to very high quality childcare, for children largely aged 3-4 years, usually for 12-15 hours per week.

Although the evidence suggests that some high quality childcare may benefit children over 3 in certain circumstances, this does not mean that starting earlier and attending for longer hours is also beneficial.

²⁴ Reynolds et al., 2007, cited by Randall, 2010

²⁵ Joo, 2010



Our conclusions

More research needs to be done. The current research indicates the need for caution about assuming the benefits of childcare and that "one size fits all". When parents are looking at their own arrangements and governments are thinking about policy, factors such as the age of the child, the length of hours of attendance and the quality and stability of the care being provided need to be considered. Although the evidence suggests that some high quality childcare may benefit children over 3 in certain circumstances, this does not mean that starting earlier and attending for longer hours is also beneficial. In fact, our research indicates that there may be risks involved with non-parental care "too early" and "for too long each day". Unfortunately, we cannot precisely define the impact of the types of care nor provide specific guidelines, as the research is not in.

Delaying participation during the first few years and encouraging part-time care over full-time care may well reduce the risks associated with non-parental care of children. When childcare is provided, insuring that care is high quality may lessen risk.

As many studies indicate parenting still has more influence over outcomes than childcare, investment in parenting support may reap more long-term benefits for children than investment in participation in childcare, especially before age three.

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Our Own Set of Scales – Risk and Protective Factors

<https://brainwave.org.nz/article/our-own-set-of-scales-risk-and-protective-factors/>

Setting the Record Straight on Perry Preschool

<https://brainwave.org.nz/article/setting-the-record-straight-on-perry-preschool/>

Behind the Headlines: Early Childhood Education and Care Literature Review Summary

<https://brainwave.org.nz/article/behind-the-headlines-early-childhood-education-and-care-literature-review-summary/>



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