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The effect of caregiver training on time-use of children living in residential care facilities

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4. Chapter Four: Results

The results were based on observations of time use of 60 children, made at six residential care facilities in the greater Johannesburg area, Gauteng. This included looking at the quantity of time children spent in different activities as well as the quantity of time spent alone. This also included looking at the quality of time spent in different activities by looking at the time spent interacting with caregivers. Communication in terms of the children's use of language is also considered. Caregivers working at three of the facilities had received training from Thusanani and caregivers working at the other three facilities, had not. These results consider the general activity profiles of infants and toddlers living in residential care facilities and compare these activity profiles of infants and toddlers from the facilities where caregiver training had taken place to those from facilities where caregiver training had not taken place.

4.1. Demographics

4.1.1. Caregivers

A total of 26 caregivers cared for the infants and toddlers observed in this study. The majority of the sample consisted of black females (73.08%) with the balance made up of white females (1.23%) and coloured females (7.69%). All the white caregivers were foreigners from either North America or Europe and were spending 3, 6 or 12 months volunteering at one of the residential care facilities, where caregiver training from Thusanani Children's Foundation had taken place. The age of all the caregivers ranged from 18 years to 49 years with a mean of 35.96 (SD 9.02) while years of experience ranged from 0 years to 11 years with a mean of 3.31 (SD 2.87).

Caregiver demographic information was analyzed in two groups, namely Trained Caregivers (those who had participated in Thusanani training) and Untrained Caregivers (those who had not participated in Thusanani training). To determine whether the two groups were homogenous in terms of demographics and work history, they were compared in terms of age, gender, population group, education level, years experience and gender. (Table 4-1 and Table 4-2.)

Table 4-1: Caregiver demographics – gender and population group

GROUP		**GENDER**		**POPULATION GROUP**			
	Mean (SD)	**Male**	**Female**	**Black**	**White**	**Coloured**	**Indian/ Asian**
Trained Caregivers (n=14)	32.6 (10.44)	0 (0%)	14 (100%)	9 (64.29 %)	5 (35.71 %)	0 (0%)	0 (0%)
Untrained Caregivers (n=12)	39.9 (4.93)	0 (0%)	12 (100%)	10 (83.33 %)	0 (0%)	2 (16.67%)	0 (0%)
p values (Significance p≤0.05)	p>0.20	NS	NS	p>0.10			

Trained caregivers tended to be younger than untrained caregivers and on average had less experience. This was influenced by the foreign volunteer caregivers who tended to be in their late teens or early twenties with no experience as compared to employed caregivers who were in their thirties and forties and had some experience. However, when the age and experience of the two caregiver groups was compared statistically, there was no significant difference.

Table 4-2: Caregiver demographics - experience and educational levels

GROUP	EXPERIENCE (in years)	EDUCATIONAL LEVEL		
	Mean (SD)	**GR.10 or equivalent**	**National Senior Certificate (Matric) or Equivalent**	**University Degree**
Trained Caregivers (n=14)	2.8 (3.02)	5 (35.71%)	8 (57.14%)	1 (7.14%)
Untrained Caregivers (n=12)	3.9 (2.98)	7 (58.33%)	5 (41.67%)	0 (0%)
p values (significance p≤0.05)	p>0.20	p>0.10		

There was a fairly even split between caregivers who had completed a grade 10 or equivalent and caregivers who had completed the National Senior Certificate (academic grade 12) or equivalent. Only one caregiver had obtained an undergraduate degree from a university and this caregiver formed part of the foreign group.

More trained caregivers had completed the National Senior Certificate (NSC) and obtained an undergraduate university degree than untrained caregivers. However, the differences in educational level was not statistically significant (p=ns).

From this analysis, it can be concluded that the two caregiver groups were homogenous for these influencing variables and that these two groups can be compared.

4.1.2. Infants and Toddlers

A total of 60 participants were observed during this study: 29 infants and 31 toddlers.

Each age group was further divided between those infants or toddlers living in residential care facilities where caregiver training had occurred and those living in facilities where no caregiver training had occurred. The infant groups were compared in terms of average age, population group and gender (Table 4-3).

Table 4-3: Infants demographic information

INFANTS	**AVE AGE**	**GENDER**		**POPULATION GROUP**			
	Mean (SD)	**Male**	**Female**	**Black**	**White**	**Indian/ Asian**	**Coloured**
Cared for by Trained Caregivers (n=15)	7.13 months (2.72)	8 (53.33%)	7 (46.67%)	12 (80%)	0 (0%)	1 (6.67%)	2 (13.33%)
Cared for by Untrained Caregivers (n=14)	7.71 months (2.33)	7 (50%)	7 (50%)	11 (78.57%)	1 (7.14%)	1 (7.14%)	1 (7.14%)
p values (significance p≤0.05)	p>0.20	. p>0.10		p>0.10			

There were no statistically significant differences between the demographics of either the infants or the toddler sample groups. There were more males than females, across both sample groups and the majority of infants and toddlers were black.

Table 4-4: Toddlers demographic information

TODDLERS	AVE AGE	GENDER		POPULATION GROUP			
	Mean (SD)	Male	Female	Black	White	Indian/ Asian	Coloured
Cared for by Trained Caregivers (n=15)	17.07 months (1.87)	9 (60%)	6 (40%)	13 (86.67%)	0 (0%)	1 (6.67%)	1 (6.67%)
Cared for by Untrained Caregivers (n=16)	16.5 months (3.37)	10 (62.5%)	6 (37.5%)	15 (93.75%)	0 (0%)	1 (6.25%)	0 (0%0
p values (Significance p≤0.05)	p>0.20	p>0.10		p>0.10			

4.2. Temporal Context of Infants and Toddlers in Residential Care (Quantity of Time)

Activity profiles of the infants and toddlers living in the different residential facilities were calculated by dividing time spent into sleep time, personal management time, meaningful activity and non-meaningful activity. Observations were completed in daylight hours between 8.00 and 17.00 only.

4.2.1. Quantity of Time Spent In Activities

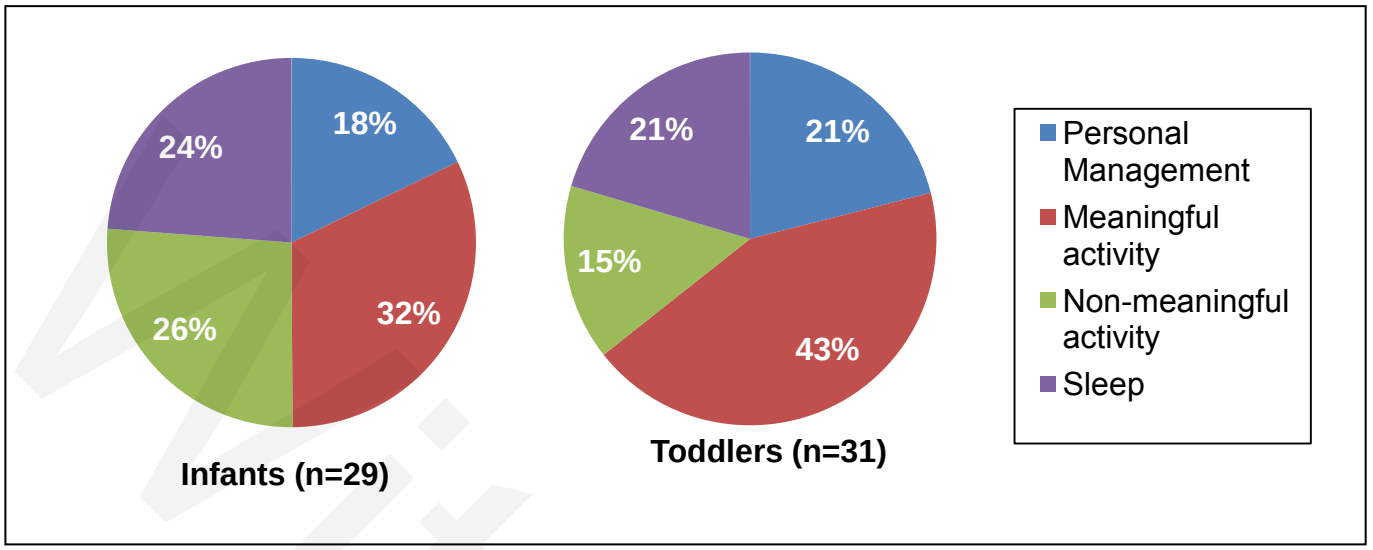


Figure 4-1: Activity profiles of infants and toddlers in residential care facilities

General activity profiles were generated for the two age groups (Figure 4-1). Infants and toddlers spent similar quantities of time in personal management tasks and sleep, but differences were noted in meaningful (play) activities and non-meaningful activities. Infants in residential care facilities were spending 26% of their day in non-meaningful activities and 32% in meaningful activity. Toddlers on the other hand spent less time in non-meaningful activity (15%) and more time in meaningful activity (43%).

4.2.2. The Effect of Caregiver Training on Quantity of Time Spent In Activities

In order to determine whether caregiver training had an effect on the time spent in meaningful activity, the activity profiles of infants and toddlers living in residential care facilities where caregiver training had taken place were compared to the profiles of

those infants and toddlers living in residential care facilities where caregiver training had not taken place.

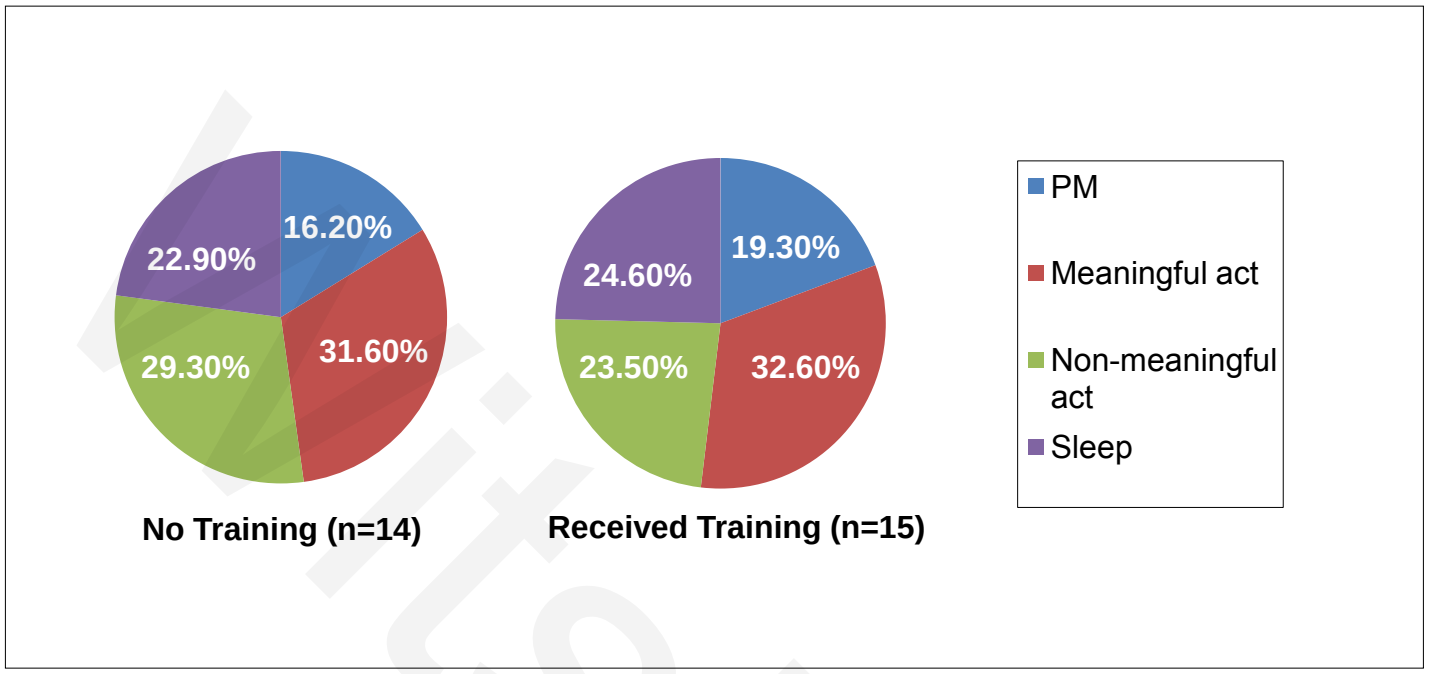


Figure 4-2: Infants' Activity Profiles

Figure 4-2 indicates that the activity profiles of infants living in residential care facilities where caregiver training had taken place was very similar to the profiles of those living in facilities where caregivers had not been trained. There was no statistically significant difference between the two profiles when significance was set at $p>0.05$ for all the domains of the profile

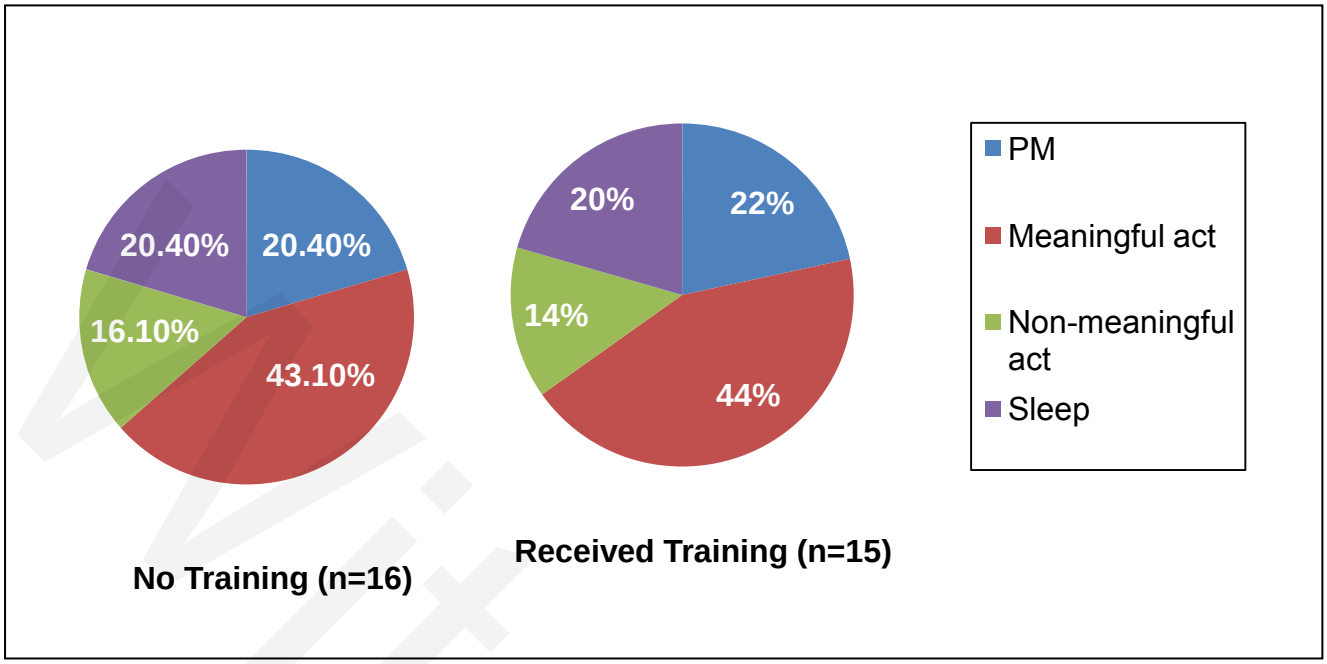


Figure 4-3: Toddlers' Activity Profiles

Figure 4-3 shows that toddlers living in residential care facilities where caregiver training had and had not taken place were very similar spending between 20% and 20.4% of their time sleeping, 22% and 20.4% of their time in personal management activities and 14% and 16.1% of their time in non-meaningful activities. The differences in these profiles were even smaller than those in the infants' profiles and none of the differences were statistically significant ($p>0.05$)

These activity profiles show that there is no statistically significant difference in the quantity of time infants and toddlers in the different facilities spend in different activities irrespective of whether the caregivers had received training or not. Thus the null hypothesis 1(a) is accepted (with regards to quantity of time spent in meaningful, non-meaningful and personal management activities).

4.2.3. Quantity of Time Spent with Others and Alone

The person with whom children within the different facilities were spending their time was analyzed to establish how much time they were spending alone. This was done by comparing the average percentage of time children in each group were spending with designated persons. This analysis was done across the infants' and toddlers' full day and included sleep time.

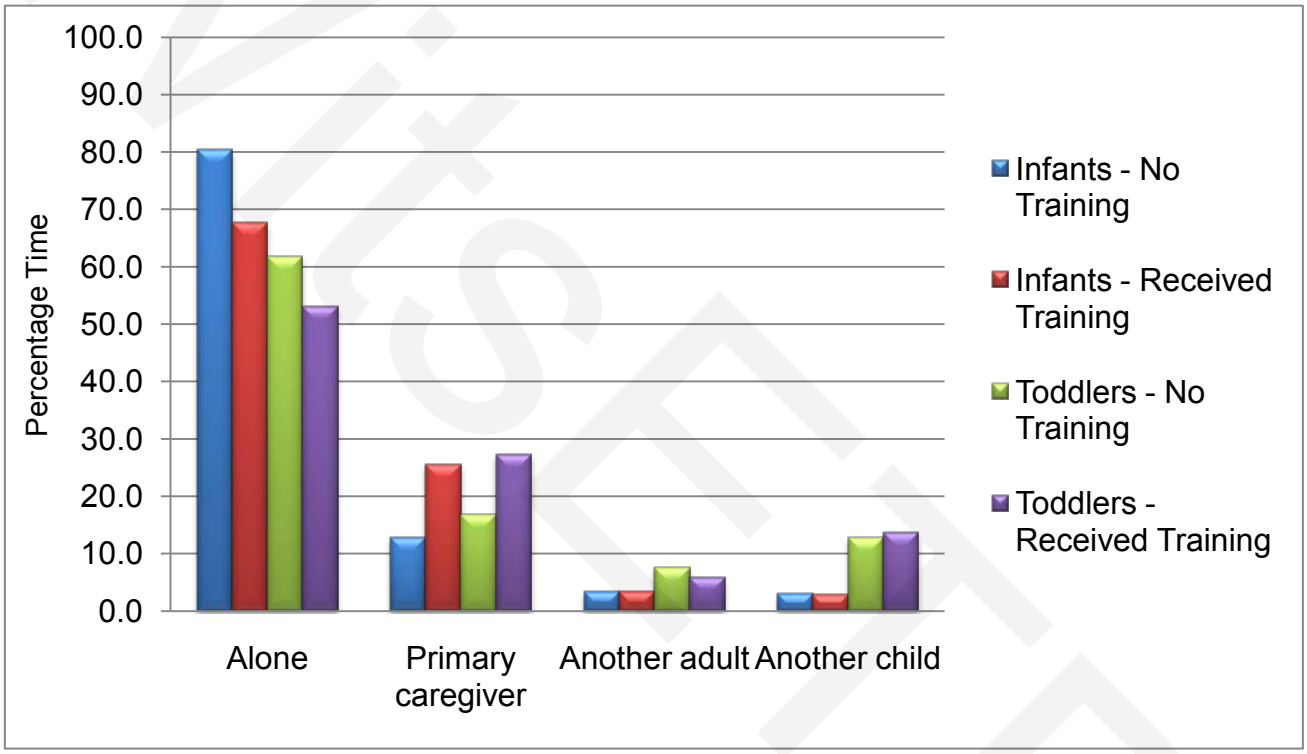


Figure 4-4: Person with whom children spent their time (including sleep time)

As it is appropriate for a child to be alone when asleep, sleep time was removed from the analysis to look specifically at awake time. Throughout the rest of the analysis, only awake time was used (Figure 4-4).

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When sleep was removed from the profile, all the children in the groups were still spending a large quantity of time during the day alone (more than 50%). There also seemed to be a link between age and time spent alone, with younger children spending more time alone regardless of whether they lived in a residential care facility where caregiver training had taken place or a facility where training had not taken place.

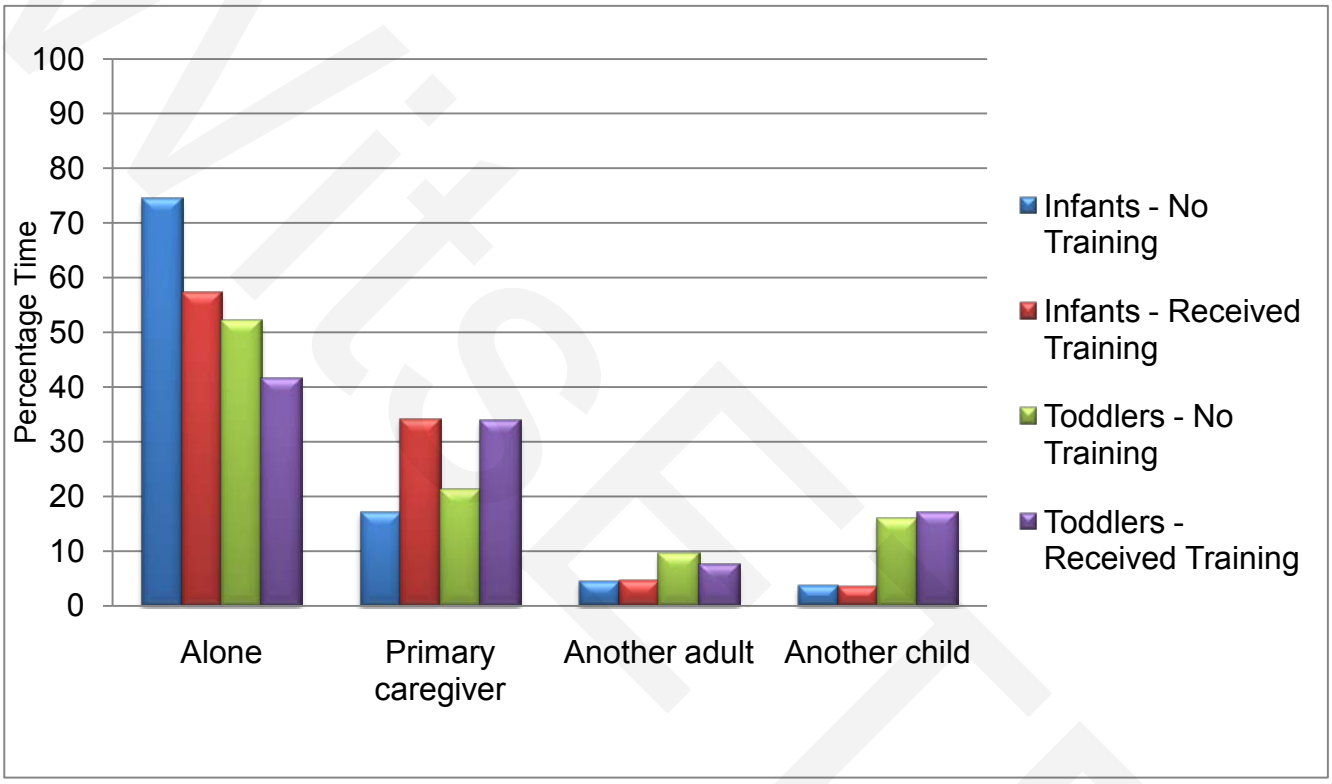


Figure 4-5: Person with whom children spent their time (awake time)

Infants living in residential care facilities where caregiver training had taken place still spent more than half their time alone (57.2%), although this was statistically significantly less ($p<0.05$) than their counterparts in facilities where no training had taken place. The quantity of time infants spent with their primary caregivers, when the caregiver had received training was almost double the quantity of time ($p<0.001$) that infants in facilities where there had been no training with their primary caregivers had occurred, spent (34.1% as opposed to 17.1%) (Figure 4-5). The differences

between the two groups with regards to spending time with another adult and another child were small and did not significantly contribute to the difference in time spent alone between the two groups.

Differences in time spent alone or with the primary care giver for the two toddler groups were less than the infant group, though still statistically significant. Toddlers living in residential care facilities where caregiver training had taken place spent just over 10% less time alone than their counterparts living in facilities where training had not taken place ($p<0.01$) (Figure 4-5). There was also a difference in the quantity of time spent with their primary caregivers and, although this difference was not quite double as in the infant group, it was still statistically significant ($p<0.001$). Once again the time spent with another adult and another child was very similar and therefore did not significantly contribute to the differences in time spent alone.

It was also noted that infants and toddlers living in residential care facilities where caregiver training had taken place, spent almost exactly the same quantity of time with their primary caregivers (34.1% and 33.8% respectively) while there is still a difference of 4.1% between the time infants spend with their primary caregivers and toddlers in facilities where no training had occurred (Figure 4-5).

Thus the null hypothesis 1(b) is rejected (there will be no difference in the quantity of time these infants and toddlers spend alone or with others).

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4.3. The Social Context of Infants and Toddlers in Residential Care Facilities (Quality of one-on-one Interaction in the Time)

In order to determine the effect of caregiver training on the social context in residential care facilities, the quality of the interaction in the time caregivers spent with their charges was investigated. The quality of interactions was measured by the type of activity a caregiver chose to engage in with an infant or toddler.

4.3.1. Effect of Caregiver Training on Quality of Interaction during Personal Management Time

Thusanani Children's Foundation's training programme specifically teaches caregivers to use personal management time, i.e. when they are feeding, dressing, changing, or bathing the child, as a time for contact and stimulation. Therefore the role of the caregiver during this time was analyzed to determine whether there was any difference in the quantity of one-on-one contact during this time between the different groups.

The time infants spent alone and with their primary caregiver in one-on-one contact during personal management time is illustrated in Figure 4-6.

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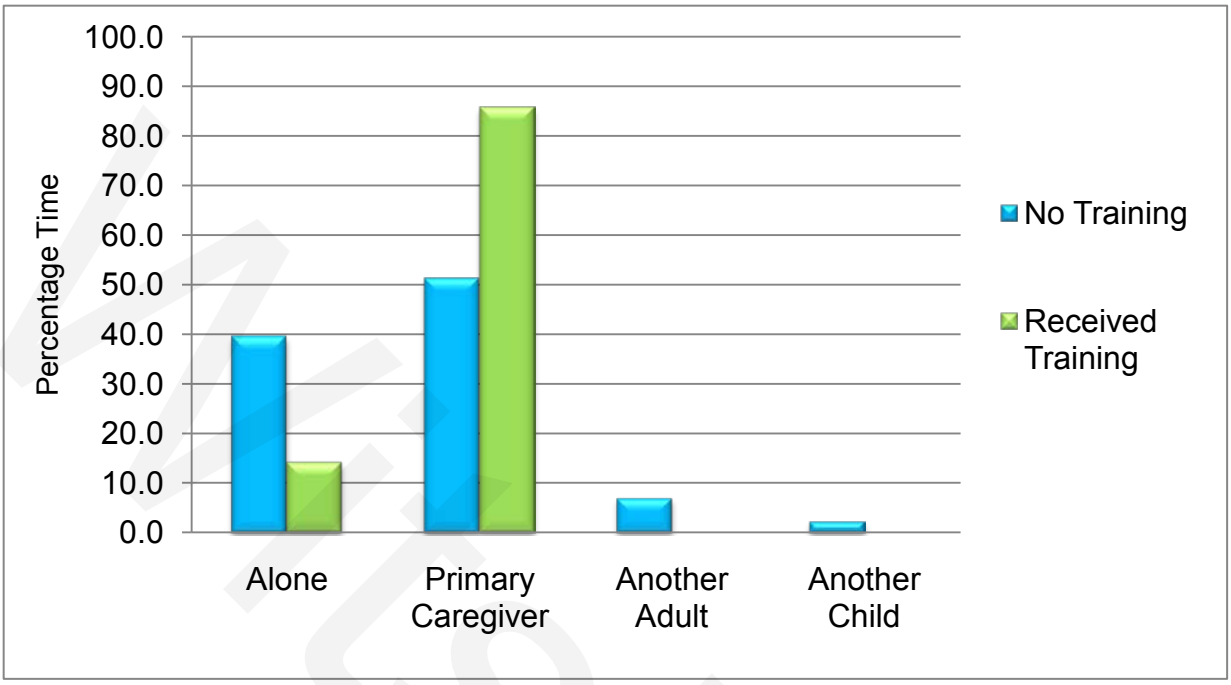


Figure 4-6: Infants - one-on-one contact during personal management time

As can be seen from figure 4-6 there is a statistically significant difference in the quantity of time infants spend in one-on-one contact time with their primary caregivers during personal management time between the groups ($p<0.001$). Infants living in residential care facilities where caregivers had not been trained only spent 51.2% of their personal management time in one-on-one contact with their primary caregivers as compared to infants living in facilities where caregivers had received training who spent 85.7% of personal management time in one-on-one contact with their primary caregivers. This indicates that the quality of the time infants spent in personal management time has improved in those residential care facilities where caregivers had received training as the quality of interactions between caregivers and infants had improved. This is indicated by the statistically significantly more time spent in one-on-one contact with their primary caregivers.

The time toddlers spend alone as compared with their primary caregiver is illustrated in Figure 4-7.

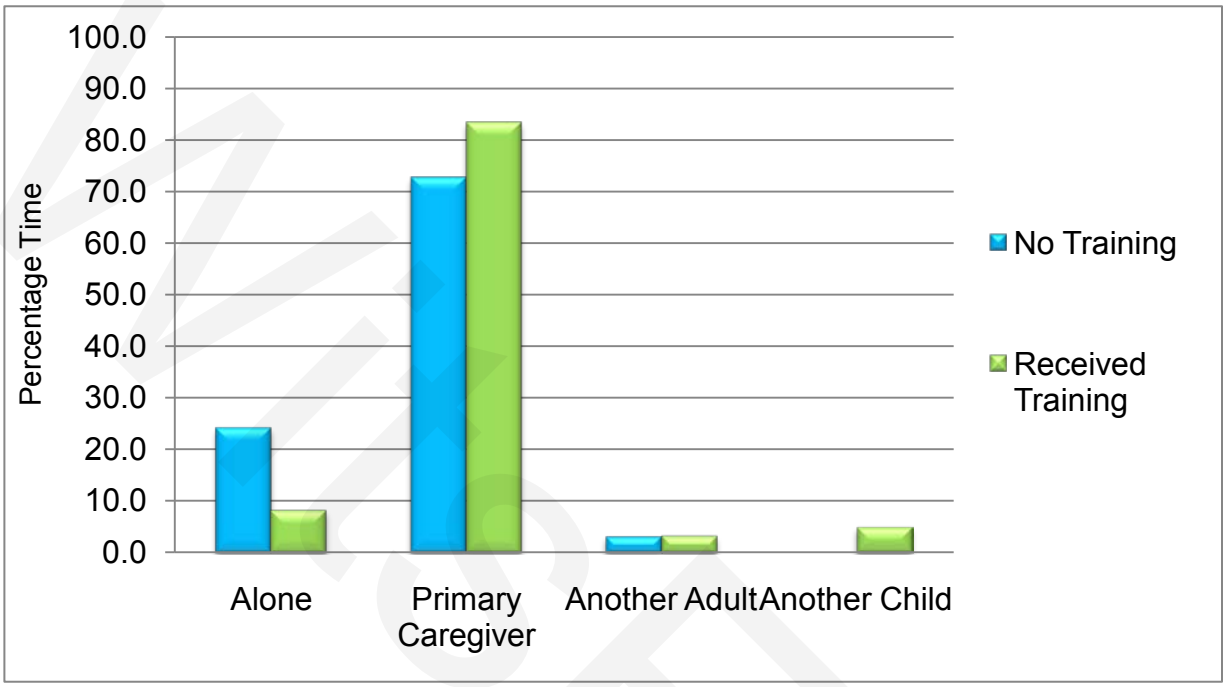


Figure 4-7: Toddlers - one-on-one contact during personal management time

The difference in the quantity of time toddlers spent in one-on-one contact with their primary caregivers during personal management time was less than the infant comparison, but there was still a difference of 10.7%. This difference, though smaller, was still statistically significant ($p<0.01$). This indicates that, although less than in the infant group, there was still an increase in the quality of time spent in personal management tasks through the increase in the quality of interactions between caregivers and toddlers indicated by the increased one-on-one contact.

4.3.2. Effect of Caregiver Training on Type of Activity during which Primary Caregiver chose to Interact

Analysis also ascertained during which activity primary caregivers were actually initiated one-on-one interaction with the children under their care. This was to determine whether primary caregivers who had received training only spent more one-on-one contact time with their charges during personal management time, or whether they were also spending more time playing with their children, i.e. whether there was more contact between primary caregivers and children in the domain of "meaningful activity" than between those in facilities where no training had taken place.

The differences of times when caregivers were making contact with infants are demonstrated in Figure 4-8.

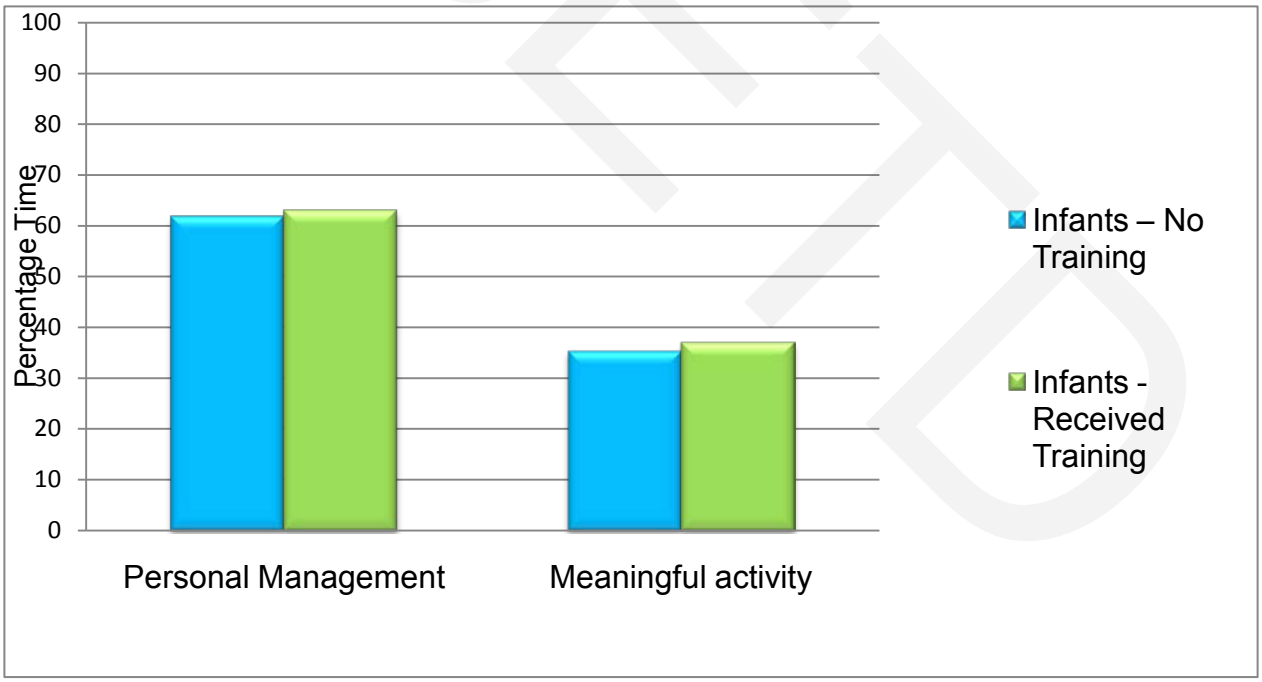


Figure 4-8: Infants - when caregivers make on-on-one contact

Although primary caregivers who had received training were spending an increased quantity of time interacting with the infants in their care as compared with caregivers who had not received training, the split between when that contact happened remained similar and differences were not statistically significant ($p>0.05$). Therefore, the greatest gain for infants where caregivers had been trained was in the quantity of one-on-one interaction from caregivers, but this did not occur more so during meaningful activities like play.

The distribution of when caregivers were making one-on-one contact with toddlers is illustrated in Figure 4-9. The toddler group, however, did show differences. Caregivers who had not received any training spent the most time in one-on-one contact with the toddlers in their care during personal management time (90%). Caregivers who had received training, however, spent statistically significantly ($p<0.001$) more time in one-on-one contact with the toddlers in their care during "meaningful activity" and did not confine their interaction to personal management time. It is important to note that this does not mean that toddlers living in residential care facilities where caregivers had received training were spending a larger quantity of time in meaningful activities, but only that their caregivers were spending a greater proportion of their one-on-one contact time with toddlers during the meaningful activity of play than their counterparts in residential care facilities where caregivers had not received training.

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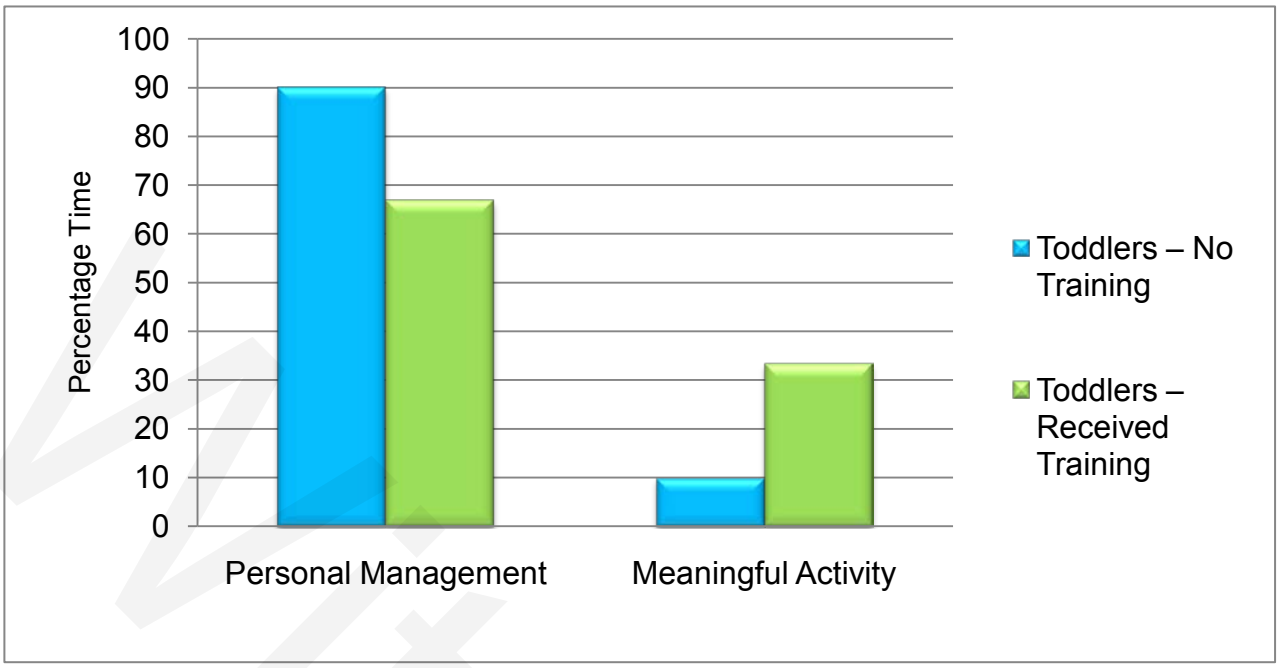


Figure 4-9: Toddlers - when caregivers make one-on-one contact

Therefore, although the quantity of time toddlers spent with primary caregivers did not increase as much as in the infant group, caregivers were more aware of the need to actually play with them.

Therefore the null hypothesis 2a that there was no difference in the quality of interaction in the time infants and toddlers living in residential care facilities, where caregiver training has and has not taken place, was rejected.

4.4. The Social Context of Infants and Toddlers in Residential Care Facilities (Communication and language use in the Time)

In order to determine the effect of caregiver training on the social context in residential care facilities, the presence or absence of communication and the child's language use during one on one interaction was evaluated. Whether caregivers were attempting to engage with infants and toddlers during routine activities such as during personal management time was thus observed.

4.4.1. Effect of Caregiver Training on Communication and the Use of Language when caring for Infants and Toddlers

Thusanani training encourages caregivers to talk to the children under their care, especially when they are engaged in personal management tasks with them. Therefore, caregiver communication or language use was analyzed during personal management time to determine if there was a difference in the time spent talking to infants and toddlers in the different facilities. The results of this analysis can be seen in Figure 4-10.

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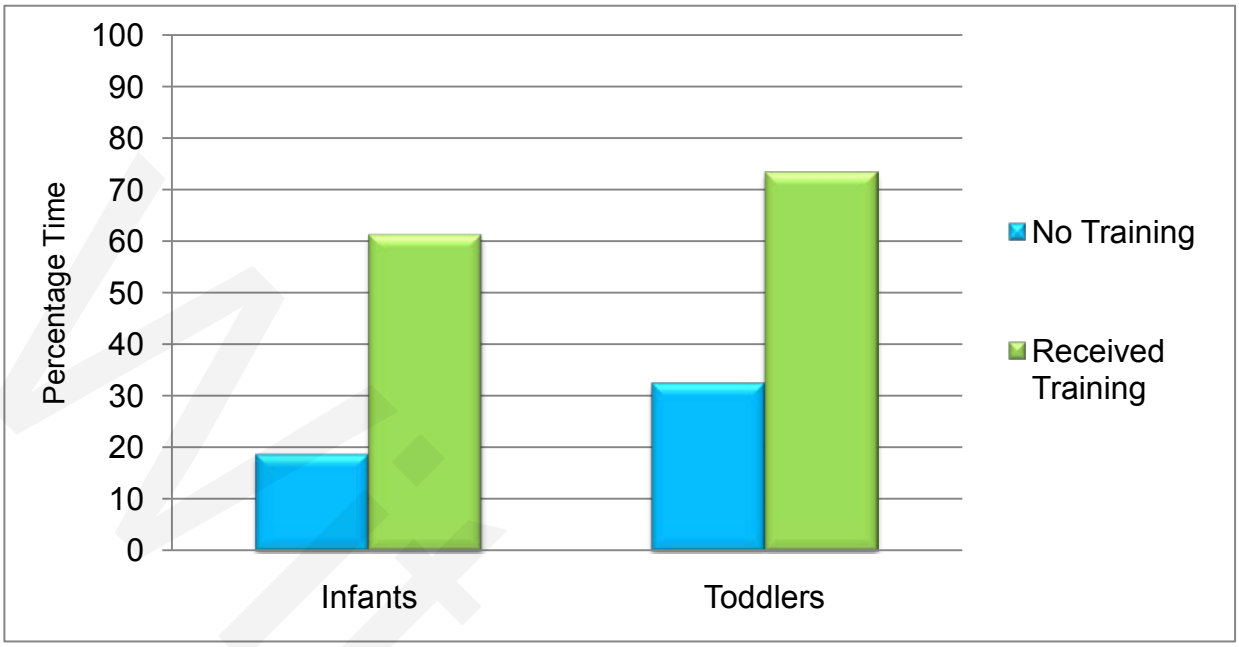


Figure 4-10: Caregiver communication or language use during personal management time

There is a significant difference in time spent talking to both infants and toddlers during personal management time between those caregivers who had received training and those who had not. Caregivers who had received training spent 42.6% statistically significantly more time talking to infants during personal management time ($p<0.001$) and 41% more time talking to toddlers ($p<0.001$). Again this indicates that the quality interaction in the time spent in personal management time has improved in residential care facilities where caregiver training had taken place.

4.4.2. Effect of Caregiver Training on the Use of Language by Infants and Toddlers

The final analysis was to look at how much time infants and toddlers spent babbling, cooing or talking to their primary caregivers during the day. Figure 4-11 illustrates this information.

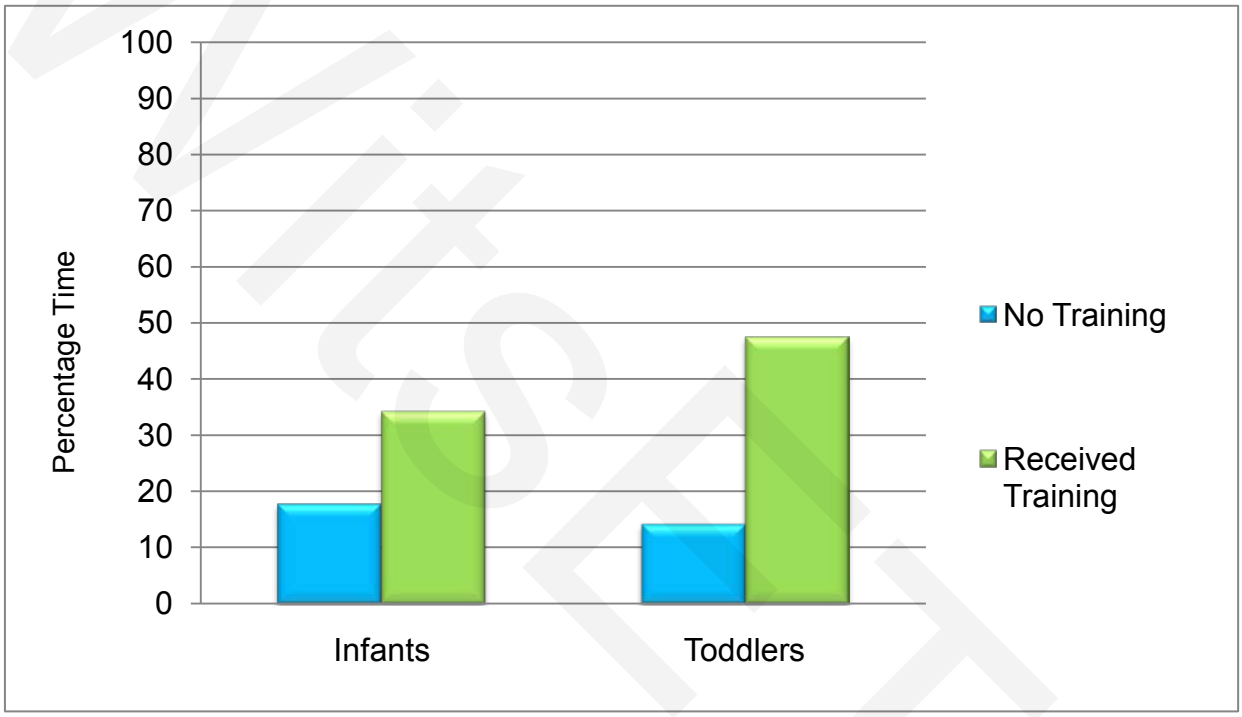


Figure 4-11: Children's language use

From the above figure it can be seen that there is a statistically significant ($p<0.01$) difference between the quantity of time infants and toddlers spent babbling, cooing or talking to their caregivers between the two groups. Infants living in residential care facilities where caregiver training had taken place spent 16.4% more time cooing or babbling than those living in facilities where no training had taken place.

This is one of the few areas in which the gains for the toddler group are greater than the gains for the infant group. Toddlers living in facilities where caregiver training had

taken place spent 33.4% more time babbling and talking to their caregivers than those living in facilities where no training had occurred.

Therefore the null hypothesis 2b that there will difference in the in terms of communication, children's language use language use infants and toddlers living in residential care facilities where caregiver training has and has not taken place is rejected.

4.5. Summary

The main findings of this study are summarized below.

(a) Caregiver training does not change the activity profile of infants and toddlers living in residential care facilities. It therefore does not change the quantity of time that infants and toddlers spend in different activities.

(b) In the infant group, the most dramatic gains due to caregiver training is the increase in the quantity of time caregivers spend interacting in a one-on-one basis with infants living in residential care facilities, particularly during personal management time. Significant gains in terms of communication from the caregivers and language use of the infants was also found.

(c) In the toddler group, although caregiver training did not increase the quantity of time spent interacting with toddlers as dramatically as in the infant group; the greatest gains were in the increase of one-on-one interaction during meaningful activity of play rather than personal management. Thus gains in the quality of interaction in time spent by caregivers with toddlers living in

residential care facilities were achieved. Significant gains in terms of communication from the caregivers and language use of the toddlers was also found.

Thus the null hypothesis 1(a) is accepted. Null hypothesis 1(b) and 2(a) and (b) is rejected.

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