



Raising the future together: Assessing the impact of the Chics program on primary caregivers in low-income daycares

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ABSTRACT

Parental involvement in a child's school is crucial during early childhood, a critical period for skill-forming and neurodevelopment. However, the impact of early childhood programs on parents is understudied. This study evaluates the Chics program – which includes teacher training, an improved curriculum, and support meetings – on parental involvement in low-income daycares in South Africa, focusing on parents' wellbeing, unity, knowledge, and agency. Focus groups and surveys with 126 parents showed the program had positive changes in parental unity, life satisfaction, and agency, encouraging community projects. The results could advise other programs to cost-effectively increase parental involvement in daycare centres.

1. Introduction

“Our children are the rock on which our future will be built, our greatest asset as a nation. They will be the leaders of our country, the creators of our national wealth, those who care for and protect our people.” President Nelson Mandela, Qunu (3 June 1995)

While a child who is not fulfilling their potential is an individual tragedy, improper development also delays a sustainable society in the future. Not only does SDG 4.2 focus specifically on ensuring quality access to pre-primary education, neglecting early childhood development (ECD) also negatively impacts multiple other SDGs by reinforcing patterns of poverty, inequality and poor health [1], and leaves children ill-equipped to manage complex problems in the future [2]. ECD is therefore crucial to creating more sustainable societies, and a growing body of research from various disciplines emphasises the importance of parents in early childhood development.

Parents' decisions in a child's early life years have a large impact on accumulated human capital later in life [3,4]. This is due to a young

child's brain being more malleable and forming more cognitive connections than an adult brain, making this period crucial for development and skill forming [5,6]. Falling behind during the first five years of life can be magnified in adulthood, to such a degree that programs focused on children younger than five are typically more cost-effective to improve the children's skills during their adolescent years than programs targeting adolescents directly [4,7].

A recent large-scale baseline study of four- to five-year-old children in South Africa that attend early learning programs, found that only 38 % children in the poorest quantile are on track with various learning outcomes, such as fine motor development, emergent numeracy skills, and cognitive and executive functioning [8]. When later entering the workforce, the children who are falling behind would be more likely to have significantly lower job quality, earning potential, and labour mobility [1,4]. Wages, which is a significant portion of total income in an economy, are a product of accumulated human capital – this includes skills, knowledge, physical and mental health – and not merely a product of raw labour [3]. For example, Gust et al. [9] estimate that if all children in South Africa have universal basic skills, the South African

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economy would be able to expand up to 18 times.¹

Many studies have evaluated the impact of various pre-school programs aimed at improving early childhood development (for example see meta-reviews [10–13]. Heckman & Mosso [11] found that successful programs also build strong relationships between parents and children. Parental involvement is so crucial for a child's development that higher parental involvement is associated with higher school achievement, irrespective of social-economic class, race, or parents' level of education [14,15]. This means that programs are more likely to have longer term positive impacts when the program sufficiently improves parental behaviour (also see [7,10]). However, despite the importance of parents to the efficiency and durability of interventions in early childhood, very few studies have evaluated the impact of these programs on parental well-being (as also noted by [12,16], and [17]).

In this study, we assess the Chics (Community/Church interface Care and Support) program, a program that is focused on increasing ECD outcomes in low-income communities in South Africa by encouraging parental involvement in the daycares. We consider the impact of the programs on parents only and we did not collect any data on the children's well-being or development. The program has three pillars, namely: (1) training the principal or a teacher who will run the Chics program at ECD centres, known as the Chics officer, (2) a curriculum offering weekly classes for children, teaching them life-relevant skills, such as handwashing, calling for help, "girls can do anything boys can", and taking care of your neighbours and the environment; and (3) a monthly meeting where the Chics officer assists parents and other caregivers to identify issues detrimental to their children's development, then to identify ways in which they can address these issues, to mobilise and take action to achieve their goals. The Chics program impacts parents in two main ways: by improving their satisfaction when their child's education improves through the new curriculum and teacher training, and by providing support through monthly meetings, fostering a supportive network that enhances parents' wellbeing.

We followed a mixed-method approach by first conducting focus groups with care givers from three ECD centres where Chics had already been implemented for multiple years. Using the results from the focus group, we set up a survey and then called 127 primary care givers from new ECD centres twice; once before the Chics program was introduced at the ECD centres, and once after the program was introduced in half of the ECD centres. We also took an attendance register at the Chics meetings, which we can link to the phone surveys with their personal details to assess the impact of the program on parents' life satisfaction, parents' preference for knowledge, feeling of unity with other parents and teachers, and agency.

The rest of the paper is structured as follows. Section 2 gives more information on the Chics program and ECD centres in South Africa. Section 3 describes our methodology, including the research design, details of the sample, and some descriptive statistics. Section 4 shows the results, and in the final section, we discuss the results, limitations of our study, and potential avenues for future research.

2. The Chics program and ECD centres

In South Africa, daycares or ECD centres² focus on children aged zero

¹ The authors define "universal basic skills" as the ability of a child of about 10 years old to solve a problem with some basic maths, such as: "If I bought an item for US\$ 2, and US\$ 1 costs R15, how much did the item cost in Rands?" Although the authors consider children slightly older than in our study, these children can only succeed in these skills if they have had the necessary development in their early childhood. These skills are needed to be internationally competitive and about 80% of South African children ten to 15 are not able to solve this type of problem.

² The terms "daycare" and "ECD centre" are used interchangeably in this paper.

to five, after which children enter mandatory schooling at Grade R. ECD centres in South Africa are often under-resourced and cannot sufficiently support the children in their care. According to a census of all ECD centres in the country done by the Department of Basic Education³ [18], 41 % of ECD centres were unregistered. In a previous census it was noted that many of the centres were unregistered because they fail to meet the basic requirements set by the government, including access to water, sanitation, electricity, and health and safety requirements [19].

It is in this context that the Chics program was developed. The organisation that developed the program, the Nova Institute, has been working in low-income communities in South Africa for >30 years. They have a transdisciplinary approach to developing interventions, seeing the communities as partners in the creation of projects, rather than passive recipients. Communities need to state their objectives and goals for the projects and advise researchers what their needs are. The Chics program has been developed over eleven years in close cooperation with ECD centres, local churches, and other role players through continuous discussions and experimentation.

Due to the highly transdisciplinary approach, the Chics parental meetings manifested differently in every community. For example, at the ECD centres that help develop the Chics program, parents in the urban area, Mamelodi, realised that they have problems with loud music from local *shebeens* (informal bars) during the nights, which makes it difficult for them and their children to sleep. The Chics officer assisted parents to form a committee that approached the *shebeen* owners and negotiated an agreement around loud music. In another example, during a Chics meeting, care givers⁴ from a rural area in Limpopo, identified lack of clean water at the ECD centre as a health threat to their children. The Chics officer assisted the group to negotiate with their municipality to install a tap on the ECD centre's premises with clean, running water. As per the agreement, the parents had to dig the necessary ditches, allowing the municipality to merely lay and connect the pipes.

The Chics program impacts parents in two main ways. The first mechanism is that the parent could feel increased happiness, satisfaction, or trust when they see that the quality of their child's daycare and education is improving, for example when a new curriculum is introduced, or a teacher receives training. The second mechanism is that the program directly supports parents and other care givers during monthly parental meetings, which could give the parent access to a support network and improve their well-being. In this study we disentangle these mechanisms in two ways; by comparing, first, the difference in the well-being of caregivers who did not attend the parental meetings while the Chics program was implemented at the daycare, compared to primary care givers who were in centres earmarked for the program but had not started by the time the study was conducted. The only difference between these two groups is that the children of parents in the one group received improved education in terms of teacher training and a new curriculum. And second, we evaluate the difference in wellbeing between care givers who attended the monthly meetings and those who did not attend. The only difference between these two groups is that the parents in one group attended parental meetings.

Given that each parental group could decide what they wanted to do during the Chics meetings, we cannot select only one outcome variable

³ At the time the study was conducted in 2019, it was announced the responsibility of ECD will move from the Department of Social Development to the Department of Basic Education in South Africa.

⁴ Although many of the children in this study grow up with one or both of their biological parents, some children are under the care of a grandparent, therefore, we broadly refer to "primary care givers" and not merely "parents" in this paper. However, we occasionally use the terms interchangeably, especially with terms like "parent meeting" or "parental involvement" that refers to all primary care givers. To keep questions simple in the phone survey, we referred to "parents" in the questions and not "primary care giver"; however, we asked to speak to the primary care giver during the phone interviews.

to measure the program's impact. We decided to use a few outcome variables that came up during the focus groups as the reason why the program enabled parents to take initiatives to improve the lives of their children. The outcomes are life satisfaction, parents' preference for knowledge, feeling of unity with other parents and teachers, and agency. According to the capability approach, for a person to be an agent of change – to have agency – they need to be capable to act [20].⁵

At the onset of this study, the Chics program had completed the co-development phase with the three existing ECD centres. The organisers were ready to start their phased roll-out approach, which means they would implement the program in a few new ECD centres, evaluate the impact, before scaling up to more centres. The organisation identified 12 new ECD centres in the first roll-out phase; this study is a preliminary investigation of the impact on parents in the first few months that the program was introduced. Given that this study focuses on the first phase of roll-out – implementing in a small number of new daycares – the sample size does not allow for a rigorous analysis but this is a crucial first step to determine the impact of the program. In this preliminary study, we are looking for the first indications of a positive impact of the program, by comparing various indicators of well-being of the parents before and after implementation. While the result of this study can also be used to refine the Chics program further, it mainly serves as a pilot study that can be used to design an effective experiment to quantitatively determine the impact of the program when roll-out continues to more daycare centres.

This evaluation of the Chics program makes a significant contribution to literature. O'Conner et al. [12] highlighted just seven interventions focusing on parent-child relationships, with only two in ECD centres, none involving daycare educators directly. This contrasts with Chics, which engages parents, caregivers, and educators in an ECD centre within a low-income context. Rao et al. [13] emphasized the challenge of adapting successful education models from developed to developing countries due to socio-economic and cultural differences. For instance, South Africa's attempt to adopt Finland's outcome-based education failed due to resource and capacity constraints among local teachers [4].

3. Method

3.1. Research design and sample

Using a mixed-method approach, the analytical approach has two parts. We first conducted three qualitative focus groups with care givers at the three existing ECD centres to understand why the Chics program was successful to increase parental involvement in these centres. The centres are one in an urban environment in Mamelodi, Pretoria (following the Chics program for five years), one in a peri-urban environment close to Polokwane (one year), and one in a rural area close to Orighstadt (eleven years).⁶

Each focus group involved approximately 15 participants and aimed to understand why Chics meetings drew higher attendance compared to regular parental meetings. The sessions began with introductions and an open discussion led by a facilitator, who encouraged participants to share their thoughts. Specific queries probed their initial and sustained attendance at Chics meetings, their preferences over general parental meetings, and how Chics sessions empowered them in addressing child-

⁵ For example, regarding the transdisciplinary design of the program, the curriculum was original developed by the Nova Institute with the help of child development specialists, but it was tested and refined by the ECD centres. In addition, the idea of parental meetings came from a pastor in the community who were unable to connect with parents – while the details of the meetings were refined by the Nova Institute and other participants.

⁶ The study received ethical approval from the University of Pretoria (T020/20).

related issues. While, due to technical issues, only one group was recorded, detailed notes captured discussions across all sessions, informing subsequent survey development.

The second part of the study included phone surveys. The survey consisted of three sections: demographics, relationships of parents with the ECD centres, and various questions about their life satisfaction and their reported agency. Trained enumerators phoned each primary care giver at baseline in July and August 2021, and again in November 2021.

We received the contact details of 290 primary care givers at the three existing ECD centres (group i, Fig. 1) and the 12 new ECD centres (group ii, Fig. 1) from the ECD centres after primary care givers gave their consent (in accordance with the National Personal Information Protection Act). Of the 290 number we received, 6 % were invalid a 31 % of the numbers were not answered.⁷ Of the 184 numbers that were valid and were answered, 9 % of parents did not give consent, resulting in 167 completed surveys, 41 were at the same ECD centres where we conducted the focus groups, and 127 were from the 12 new ECD centres. In the second part of the analysis, we only used the 127 completed surveys from the new daycares.

All primary care givers at the new centres were unaware of the Chics program during the baseline survey; during the second survey, six ECD centres had started implementing the Chics program and the other six had not. The program organisers decided to focus on the six implementing ECD centres that were able to start on time and postpone implementation in the others. At the time of writing, the organisers were still in contact with all ECD centres but only one ECD centre who postponed implementation has started with the Chics program after the end-line survey.

3.2. Identification strategy

We do a simple comparison of means before and after implementation of parents' wellbeing focused on variables across four categories: knowledge, unity among parents, agency, and life satisfaction, detailed in Appendix A1. The outcomes were selected based on the findings of the focus groups. While some question would be unique to this study, other questions, such as on agency and rating general life satisfaction on an eleven-point scale (zero being unsatisfied and ten being satisfied), were based on questions from the World Value Survey [21].⁸ The advantages of using a wide range of indicators are that we see a comprehensive image of the wellbeing of parents. The disadvantage is that these indicators are subjective, but given the heterogenous nature of the program, concrete, revealed outcomes are not the same for each ECD centre.

Originally all new ECD centres were planning to implement the Chics program shortly after the first baseline survey. However, due to various unforeseen circumstances, half of the ECD centres had to delay the implementation of the Chics program to after the end-line survey. This puts us in a unique situation to compare three sub-samples to explore various mechanisms in which the program affects parents. First, we compare caregiver from centres that delayed implementation of Chics (group b, Fig. 1) to caregivers at Chics implementing centres that did not attend any Chics meetings (see group a.1, Fig. 1). This comparison isolates the impact of improved childcare quality due to curriculum enhancements and teacher training. Second, we assess differences between

⁷ Enumerators tried each number at least three times, at different times of the day. Since many people do not answer calls from unknown numbers to avoid spam callers, the enumerators also sent out an SMS to parents who repeatedly did not answer calls, to say they are reaching out to parents on behalf of the daycare.

⁸ Measuring life satisfaction or subjective well-being can be measured on various scales. The eleven-point scale we used was taken from the World Value Survey and is often used in similar studies, see Cheung and Lucas (2014) that mentioned various studies and show that such single-item life satisfaction measure shows similar performance to other multiple-item measures.

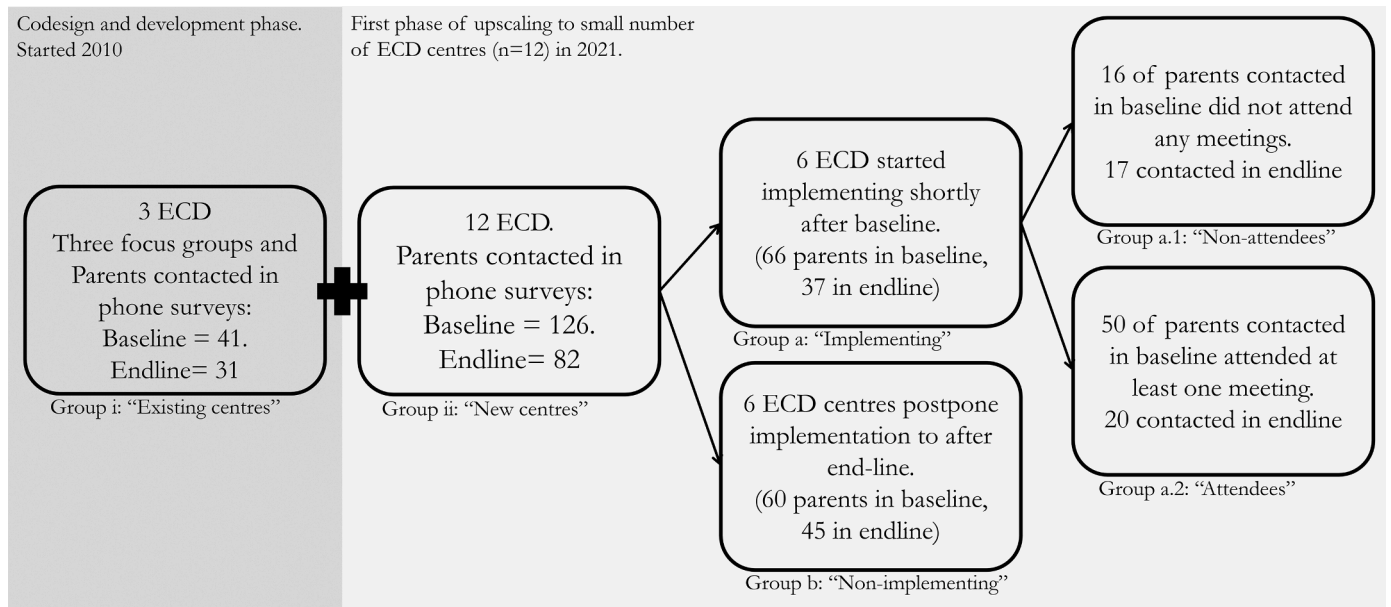


Fig. 1. Different groups for comparison with sample sizes.

parents who attended Chics meetings (group a.2, Fig. 1) and those who did not (group a.1, Fig. 1), showing the program’s direct support mechanisms, which has the potential to enhance wellbeing through inter-parental and educator support groups.

While we ideally seek groups with parallel trends to show that any differences in means are due to the program and not pre-existing differences between the groups, given the informality of the participating ECD centres, and that we only have data for two periods, we cannot quantitatively show that the daycares are similar. Nonetheless, the 12 new ECD centres were purposely selected in part due to their similarity by the organisation because that was the type of daycare targeted in this

program: relatively small, independent daycares in a low-income neighbourhood that are willing to work with the organisation in the implementation of the program.

Moreso, although not randomised, there were multiple reasons – mostly exogenous to the program – why the comparison daycares did not start the Chics programs by the endline. For example, in a few cases, the teacher had other responsibilities and needed to postpone the implementation of the Chics program due to time constraints, in one centre the staff have not been able to find a suitable starting date for the program, one ECD centre were busy with renovations and had limited space, another centre was unsure what care givers’ reactions would be

Table 1
Characteristics of primary care givers at various ECD centres.

	(1) Existing ECD centres	(2) Non-implementing	(3) Non-attendees	(4) Attendees	(5) Difference (2)-(3)	(6) Difference (3)-(4)
Age (mean)	42.1	34.2	31.8	29.1	2.3	2.7
Age (%): younger than 30	22.0 %	33.3 %	42 %	50.0 %	-8.7pp	-8.0pp
Age (%): 30 to 39	36.6 %	41.7 %	48 %	43.8 %	-6.3pp	4.3pp
Age (%): 40 and older	41.5 %	25.0 %	10 %	6.3 %	15.0pp**	3.8pp
Year in neighbourhood	30.6	14.0	15.4	10.2	-1.4	5.2
Financial situation						
Very bad	7.3 %	8.3 %	0 %	0 %	8.3pp**	-
Bad	58.5 %	35.0 %	48.0 %	25.0 %	-13.0pp	23.0pp
Neutral	24.4 %	46.7 %	34.0 %	62.5 %	12.7pp	-28.9pp**
Good	7.3 %	10.0 %	18.0 %	12.5 %	-8.0pp	5.5pp
Very good	2.4 %	0 %	0 %	0 %	-	-
Employment						
Employed	31.7 %	66.7 %	66.0 %	25.0 %	0.7pp	41.0pp***
Unemployed	46.3 %	20.0 %	32.0 %	43.8 %	-12.0pp	-11.8pp
Other	22.0 %	13.3 %	2.0 %	31.2 %	11.33pp**	-29.3pp***
Highest education						
No education or some primary	0 %	1.7 %	6.0 %	0 %	-4.3pp	6.0pp
Secondary incomplete	50.0 %	26.7 %	28.0 %	50.0 %	-1.3pp	-22.0pp
Secondary complete	35.0 %	35.0 %	38.0 %	18.8 %	-3.0pp	19.3pp
More than secondary	15.0 %	36.7 %	28.0 %	31.3 %	8.7pp	-3.3pp
Average number of parental meetings attended in 2019	3.0	1.7	0.9	0.5	0.9***	0.36

The existing ECD centres (n = 3) have been running the program for up to eleven years. “Non-implementing” refers to parents at ECD centres that postponed implementation of Chics to after the end-line survey. “Attendees” and “non-attendees” are parents from ECD centres that started implementing the Chics program after the baseline, referring to parents who attended and not attended the Chics parental meetings, respectively. Employed participants include full-time, part-time, and self-employed; unemployed participants include those actively looking for work and discouraged workers; other include students, homemakers and pensioners. In South Africa, primary education is completed in Grade 7, secondary education is completed in Grade 12, more than secondary education include further vocational training, diplomas, undergraduate and postgraduate degrees. The last two columns show the difference in means and in percentage points (pp), with significance indicated by * p < 0.1, ** p < 0.5 and *** p < 0.01.

and asked to postpone the program until they could talk to care givers about it at a general parental meeting. Moreso, the 12 daycares are evenly split in two different neighbourhoods, GaRangkuwa and Nellmapius, half in each neighbourhood implementing on time. Therefore, we believe that the parents of the six implementing and six non-implementing groups had a high degree of similarity.

Moreso, at the baseline we asked all care givers how many general school parental meetings they attended in 2019 (see Table 1). This could be seen as a composite figure of the parental involvement of the year 2019, an important characteristic relevant for this study. Here we did not see any significant difference between attendee and non-attendee parents. Meaning, in the schools where the Chics program was implemented shortly after baseline, parents who later did not attend Chics parental meeting had a slightly higher (but not significantly different) attendance rate in 2019 than parents who later did attend Chics meetings. Therefore, although there is a high risk of selection bias into the “attendee” group (group a.2, Fig. 1), we do not see significant differences in parental involvement between attendee and non-attendee parents two years before the onset of the study.

Since the sample size does not allow a more rigorous analysis, we cannot quantitatively control for all possible confounding factors. However, since the reasons for postponing the program was random and since the organisation purposefully selected the 12 new daycares from the same two urban neighbours (with half of the postponing and implementing daycares in each neighbourhood), there is a high degree of similarity between the groups, which already control for many confounding factors. Nonetheless, this is a crucial preliminary investigation to understand the impact of the program and will allow us to design a more targeted study that can rigorously evaluate the impact of the program when scaled up to more ECD centres.

4. Results

4.1. Descriptive statistics

The following table shows characteristics of the primary care givers at the three types of ECD centres that we considered: (1) the three existing ECD centres (group i, Fig. 1); (2) the parents with children in ECD centres that delayed implementation of the Chics program (group b, Fig. 1); (3) the parents with children in ECD centres that implemented the Chics program but did not attend monthly meetings (group a.1, Fig. 1); and (4) parents at the same implementing daycares, who did attend the meetings (group a.2, Fig. 1).

While care givers who attended Chics meetings were slightly younger, we do not find any significant differences in the ages of the various groups. We also do not find any significant differences in the number of years the various groups in new ECD centres have been living in the areas, but care givers from existing ECD centres have been living in their neighbourhoods for up to three times longer.

While more care givers in non-implementing ECD centres said they are financially in a very poor situation, parents that did attend Chics meetings were more likely to report neutral financial situation. Non-attendee parents were more likely to be employed compared to attendees. We find no significant differences in the educational level of the various groups for new ECD centres, while the parents from existing ECD centres reported lower levels of education.

Care givers from existing ECD centres reportedly attended on average three parental meetings in 2019. This is higher than the various parental groups at the new ECD centres (columns 2 to 4). While we find no significant difference in the number of parental meetings attended in 2019 between attendees and non-attendees in implementing centres, care givers in non-implementing ECD centres attended more parental meetings in 2019.

4.2. Focus groups at existing ECD centres

Since every group identify the issues in their community that they want to address to improve the lives of their children, from contacting local bars to reduce noise in the night or negotiating with municipalities to supply piped water to the ECD centre, it makes it difficult to identify a single outcome variable to determine the impact of the Chics program on parents. During the focus groups we wanted to identify what changes in the parents’ perspective, enable them to take on these projects to create a healthier environment for their children.

Although each ECD is in a different context, we identified the following overlapping themes during the focus groups with existing ECD centres: (1) influence of teachers and Chics officer, (2) Chics meetings create an opportunity for care givers to unite and mobilise, (3) knowledge, and (4) agency. First, care givers said the Chics officer was a driving force for the success of the program at two ECD centres. At the third centre, the care givers said that the Chics officer inspires them and that they were attracted by her lifestyle and conduct, which the Chics officer attributed to Chics.

Secondly, the value of the community or unity that the Chics program offers was a very strong theme during all the focus groups. One care giver said: “We can thank (the CHICS officer), who leads us in a manner that makes us one. Yes, we are united.” At regular ECD parental meetings, teachers talk about school matters, which makes the care givers the benefactors: they must contribute money or help to clean the school premises, etc. That brings tension between care givers and the ECD centre. At the Chics meetings care givers and daycare staff identify issues that affect the children and then the parents unite to address these problems. This means that the parents and teachers are united against their common problem.

Chics parental meetings serve as a platform for care givers to unite and mobilise, and to support each other. One participant said: “Chics found us separated and living our own lives and minding our own business as people and it brought us together as parents and showed us that we cannot live alone but we need each other, so it made us one.” At another focus group another participant said: “I think we had no platform. There was never that idea for parents to meet. It was never there. The idea for parents to meet and encourage one another was not there.” The care givers liked it that Chics is children-centred, specifically regarding their own children but also other children in the community.

Thirdly, participants mentioned that they value the skills and knowledge that they get through the Chics program. One participant mentioned: “When Chics came here, it found us empty, very empty and it gave us knowledge... We were empty in our minds, but it opened them and fill them with information that would help us tomorrow.” One focus group also mentioned external support, such as a social worker who was a guest speaker at one Chics meeting, that are available to them, as they learnt about at Chics meetings.

Lastly, many participants also mentioned that Chics gave them agency, meaning that they can now take control of their circumstances. Specifically, participants mentioned that Chics gives them self-confidence and inspires them not to “give up and that it made them realise that they can also do things.” One participant said: “Because we agreed together that we want water for our children, we dug the ground from the water affairs offices to here at the daycare and installed the pipes. We installed the water pipes on our own. We did it ourselves.... We also want to have better things, but we know that if we just fold our hands nothing will come, so we do it on our own.” Another said: “Mainly we talk about things that involve children, about what we can do to make their lives better, the things that affect our lives, e.g., water, waste removal, how we can be together and do things together... We want good things for our children so if we just fold our hands nothing good will come up for them.”

From the focus groups we identified the following hypotheses to test in the individual surveys. The Chics program...

1. serves as platform for teachers, care givers and to unite with the broader community;
2. increases care givers' willingness to learn information and skills to assist their children with development; and
3. increases parental agency, meaning the Chics meeting gives them the capability to act.

4.3. Individual phone surveys

We have therefore identified two outcomes related to each of the above hypotheses to estimate the impact of the Chics program. For the first hypothesis, we consider whether participants feel that parents of the day care support each other and stand together to help their children; and also, that they can stand together to fix poor service delivery in their neighbourhood. For the second hypothesis, we consider if primary care givers agree or disagree with the statement that the teachers at the day care are very knowledgeable about childcare; and, also, that they like to listen to outside people to give talks and advice. For the third hypothesis, we consider to what extent primary care givers feel they have the freedom to do what they want to do; and, also, if they feel they are in control of their lives, meaning if they work very hard, they will be successful in life. Additionally, for a general indicator, we also asked participants how satisfied they are with their life on a scale of one to 10.

Using multiple outcome variables gives us a more comprehensive overview of parents' well-being. However, a disadvantage is that the outcomes are subjective, due to the heterogenous nature of the program, revealed outcomes are different for each ECD centres. See Appendix A1 for the questions used for each of the above hypotheses.

From Fig. 2 we can observe most of the means are rather high. All means in the non-implementing group and all except two outcomes in the implementing group are above seven out of ten. The non-implementing group also shows little change between the pre- and post-intervention surveys, which makes sense, since they maintained their status quo and did not implement the program. The implementing group show slightly more change between the pre- and post-intervention means. The third and fourth panel disaggregate the implementing group into the attendee and non-attendee groups. For the non-attendee group, we see small increases in outcomes related to agency, but small decreases in the outcomes related to knowledge. Changes in unity is not conclusive, with increases in the feeling that parents stand together but decreases in the feeling that parents can address problems like service delivery together. In the attendee group, we see relatively large increases in unity and life satisfaction but decreases in agency and knowledge indicators. Given the small sample size of the attendee group, these means need to be interpreted carefully.

In Fig. 3, we compare the percentage change in each outcome of various parental groups – with colours indicating various hypotheses, i. e., the Chisc program gave parents increased unity, agency, willingness to receive knowledge and life satisfaction. Indicators that increased for the group on the y-axis are above the x-axis, and all indicators that increased for the group on the x-axis will be to the right of the y-axis. This allows us to compare changes between the various groups. Note that the x-axis in the third panel ranges from -20 to 20 and not -10 to 10 like in panels 1 and 2, to allow for clearer reading.

In the first and second panel, we can again see that the non-implementing group had little variation from pre- to post-intervention,

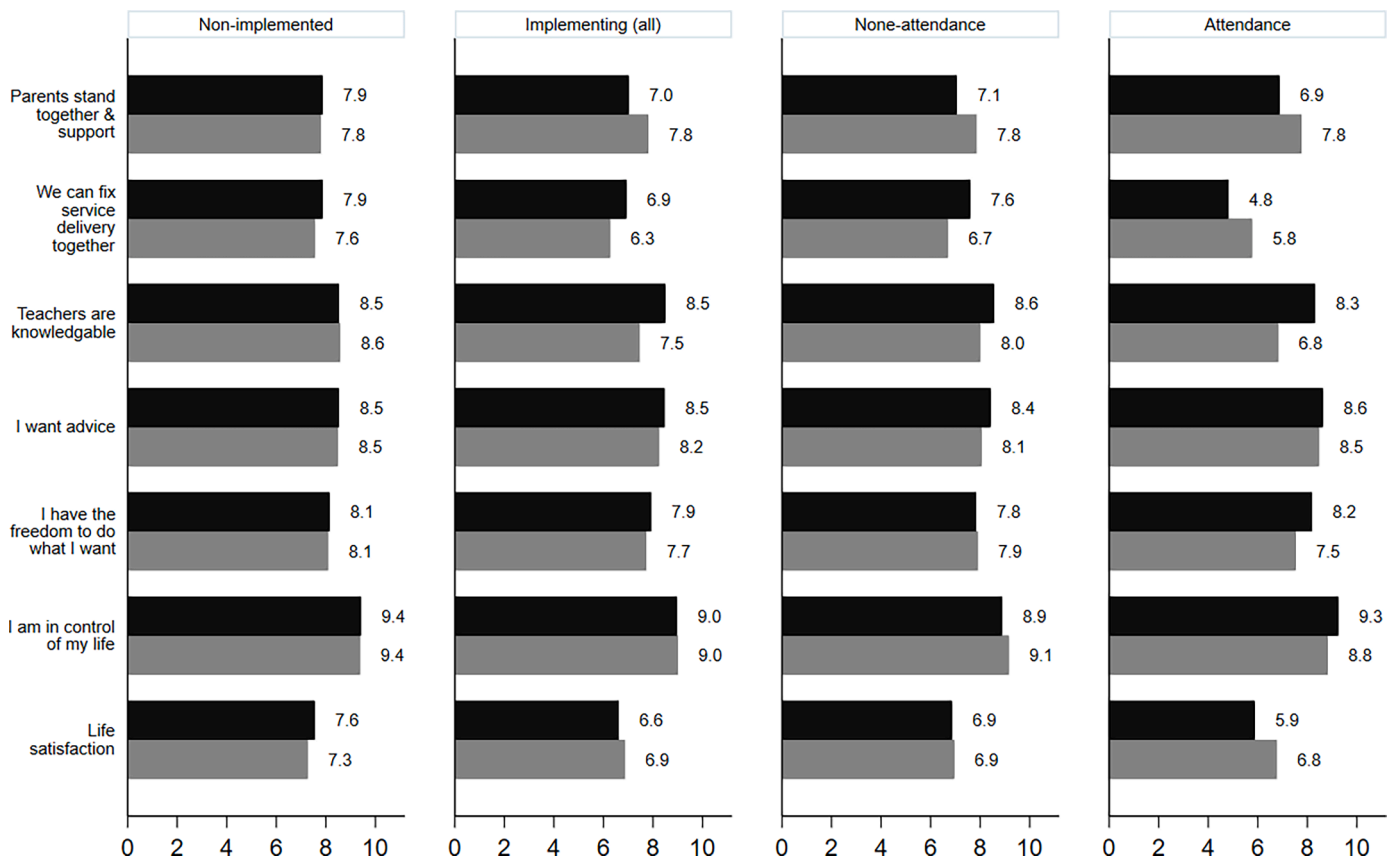


Fig. 2. Mean of each outcome before and after intervention.

Participants were asked if they agreed with each statement on a scale of zero to ten. Dark grey bars refer to the average reported score in the baseline survey (before the Chics program was implemented) and the lighter grey bars refers to the average reported score in the endline survey when the Chics program was implemented in half of the ECD centres. "Non-implementing" refers to parents at ECD centre that postponed implementation of Chics to after the end-line survey. "Implementing" refers to parents with children in ECD centres who did implement on time and is further divided into "attendees" and "non-attendees", referring to attendance of the Chics parental meetings.

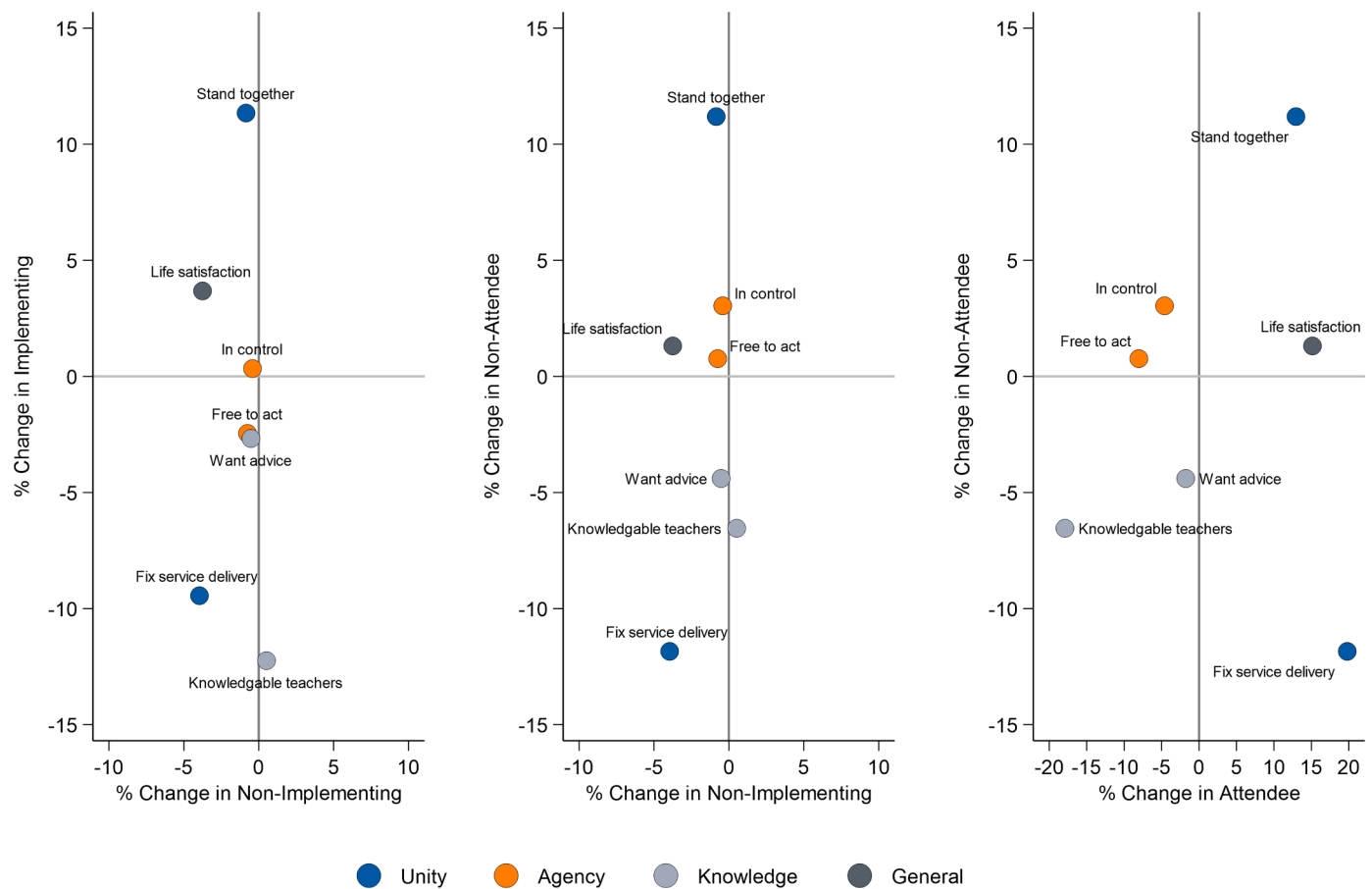


Fig. 3. Comparing various changes in means from pre to post intervention comparing various groups. “Non-implementing” refers to parents at ECD centres that postponed implementation of Chics to after the end-line survey. “Implementing” refers to parents with children in ECD centres who did implement on time and is further divided into “attendees” and “non-attendees”, referring to attendance of the Chics parental meetings. In the first panel, we compare changes in the implementing daycares to non-implementing daycares. In the second panel, we compare changes in the non-attende group to the non-implementing group. In the third panel, we compare changes in the non-attende group to changes in the attendee group.

shown by the relatively tight clustering around the y-axis. While the implementing group shows large increases in thinking that parents at the ECD centre stand together and support each other, the indicator decreased slightly in the non-implementing group. In the third panel, we see that increases in this indicator for unity are similar for the attendee (13 %) and non-attende groups (11 %). It could be an indication that merely implementing the program increases some feeling of unity, which is not attributed to either the parental meetings or improvements for the children at the daycare. However, the other indicator of unity – thinking that parents can stand together to fix service delivery – shows a large increase in the attendee group but a large decrease in the non-attende group (see third panel). This is expected since discussing and mobilising to address service delivery is a large aspect of the parental meetings.

In all three panels, we see the changes for the indicators of agency being relatively close together, meaning changes in agency was small and of similar size. The only group that shows large changes in agency is a decrease in the attendee group. This is unexpected, since the parental meetings focus specifically on increasing agency. However, since we see a large increase in unity for the attendee group, it could be that agency will follow in the longer term and that the short time span of the study did not sufficiently capture this. However, despite the short time span of the study we see an increase in life satisfaction for the attendee group, while it decreased for the non-implementing group and only increased slightly in the non-attende group.

In the first panel we can see that none of the outcomes increased in

the non-implementing group, except thinking that teachers are knowledgeable. Interestingly, this indicator shows the largest decrease for the implementing group. One explanation would be that the parents did not engage a lot with the teachers about their children before the Chics parental meetings. During the parental meetings, the parents might have realised that the teachers know less about early childhood development than they first assumed. This is also confirmed in the third panel, that shows parents thinking teachers are knowledgeable decreased much more in the attendee group than in the non-attende group. The other indicator of knowledge – parents wanting to receive information about their children – is the other indicator that decreased from pre to post for all the groups.

5. Discussion

A large body of research has found that parental involvement in children’s lives have large potential benefits for various development outcomes for the child [11,15,22–27]. Quality interaction between care givers and young children is key to children’s healthy cognitive development, especially in the age of zero to five years when the human brain has a high degree of neuroplasticity [4].

Many studies have found that early childhood development interventions that support and educate parents to improve their parenting and interaction with their children have significant positive long-term gains for the children and is highly cost-efficient [27]. This is especially true in low-income areas where a child’s access to healthy

stimulus for development is limited, either because they go to daycare at a later age, they attend a lower quality day care or their home environment does not offer them healthy stimulation [27,28]. A stimulating home environment includes access to educational toys or books and healthy interactions with care givers. Low levels of stimulation in the early childhood phase are correlated to various higher risk behaviours later in life, such as of criminal behaviour and teen pregnancies [27,29]. We focus on the Chics program that focuses on improving parental cooperation and communication between teachers and parents and could therefore improve these low-stimulus environments at home and at the ECD centre.

In this study, we wanted to determine the impact of the Chics program has on parents. First, the program introduces a curriculum, developed with low-income daycares and child-development experts, to the ECD centres. Second, the program includes teacher training. Although we do not evaluate the impact on children in this study, these two aspects of the Chics program could considerably improve the quality of stimulation for the children in the ECD centre. Lastly, the Chics program also hosts monthly parental meetings, where parents and other care givers systematically talk about the environment their children are exposed to, they then identify issues they could address as a group and mobilise to do so. During the meetings parents also receive information on how to improve their interactions with their children at home. This aspect of the Chics program also has a significant potential to improve the stimulus that children receive at home.

Using focus groups and individual surveys, we found that the Chics program had a positive impact on parents' life satisfaction and unity. During focus groups with parents at ECD centres who have been implementing the program for several years, we find that the Chics officer (person trained to manage the Chics program) has a large positive impact on the primary care givers' trust and engagement with the centre. Participants also mentioned that they find community and unity with other primary care givers at the Chics meetings, unlike normal parental meetings where the centre usually asks for more financial contributions, creating tension. The primary care givers also mentioned that they receive knowledge and training at the Chics meetings. All these factors, the facilitator, unity among care givers and knowledge, allow them to increase their agency. For example, many participants mentioned that they "do not sit with their hands folded anymore" – indicating that they feel Chics has helped them to unite and take initiative to address the problems that their children face. This is in line with a qualitative study that found teachers in a village in Nigeria were more likely to lack agency than to have agency but to choose not to act on it [30].

Li and Fisher [31] also found that unity among parents, or strong parental networks, is associated with increased parental involvement in ECD centres in the USA, using data from 2000. Since parental involvement is typically lower in disadvantaged schools – probably due to the higher effort for parents to get involved in school, such as inflexible work hours and higher likelihood of being a single parent – the authors also found that the value of parental networks is larger for parents from a disadvantaged school, making the value of improved parental networks especially important in this context.

During the phone survey, we found that within five months of implementation in new ECD centres, parents who attended the parental meetings show an increase in unity. Unlike attendees, non-attendees did not feel parents can work together to fix service delivery (one of the indicators of unity). However, both parents who attended Chics parental meetings and those who did not, show an increase in the feeling that parents at the daycare stand together, which means that another factor – not the teacher training, improved curriculum or parental meetings – could have caused this feeling of unity. One possibility is that merely implementing a program at the daycare gave the parents some sense of unity. We did not observe large changes in agency in any of the groups, in fact, for the parents who attended parental meetings, agency even decreased. This could be due to that the period that we consider in the

phone surveys is relatively short, unlike the agency that parents in the focus groups (who have been involved in the program for multiple years) very clearly expressed.

Parents who attended Chics parental meetings were also more likely to report higher life satisfaction. However, we do not find that the training of the teacher or implementing a new curriculum had any positive impact on parents' life satisfaction. This is in line with a report from the Centre of Development and Enterprise [32] that found parents are on average relatively uninformed in the quality of their children's education; despite the educational crisis in South Africa, and with 80 % of ten-year olds not able to read with comprehension [9], as many as 69 % of parents classify their child's school as "good." This implies that, if parents are relatively unaware of the content and quality of their children's education, changes in the daycare would probably not have a large influence on them.

In addition, non-implementing ECD centres were the only group that reported any increase in thinking teachers are knowledgeable. This could also be because parents are relatively unaware of the quality of education their children receive, but that they become more aware of the level of teachers' knowledge during the parental meetings and that this is lower than the parents originally assumed. This was not the case during the focus groups with parents that had been involved in the program for multiple years; these parents expressed high trust in the Chics officer's ability to help with children. One parent said: "The [Chics officer] conducts house visits and one day she went to a certain home and helped a child to get help... We were all worried about that child, but the [Chics officer] helped to address that case and we were so happy as the community." It is important to note that in this case, the Chics officer was not a teacher, but an independent person trained to be the Chics officer.

While we contribute to the literature on the efficiency of interventions in early childhood development that includes parents and ECD centres, our study does have some limitations, such as the short time span considered in the phone surveys and the small sample size. Lastly, since parents could choose to attend the Chics meeting, we cannot fully eliminate the selection bias into the groups – when comparing attendees and non-attendees. To conduct this study on a larger scale we identified the following aspect to include into subsequent study designs: first, a larger sample size of ECD centres that implement the program in a staggered manner, which would allow us to create a control and treatment group by comparing those who have already implemented to ECD centres who have not yet implemented the program. This would allow us to do a difference-in-difference analysis. Second, given the lack of data in these informal contexts, we would need to survey all (control and treatment groups) monthly for about half a year before the offset of the program, so determine if the parallel trends assumption holds. Third, we would need to keep attendance records of normal parental meetings in the control group. Comparing changes in parents who attended Chics parental meetings in the treatment group with parents who attended regular school parental meetings in the control group would eliminate some of the selection bias into groups. In addition to this study design, we could also evaluate the impact of the program on children.

6. Conclusion

The Chics program shows promising results as a possible intervention to foster parental involvement, which is important to ensure a cost-effective intervention to improve early childhood development in low-income communities. The three-part program, encompassing teacher training, an enhanced curriculum, and support groups, has positively impacted parents' well-being. Specifically, monthly Chics parental meetings show positive impacts on parental life satisfaction and unity between parents, indicating its potential to address issues related to children's well-being and stimulate positive change in both ECD centres and in the home environment. While the study has limitations, including

a short time span and a small sample size, we propose robust methodologies for future research, specifically the need for a more extensive evaluation of the program's impact on both parents and children.

CRedit authorship contribution statement

Antoinette van der Merwe: Writing – original draft, Visualization, Project administration, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Catherine Senyolo:** Project administration, Investigation, Conceptualization. **Attie van Niekerk:** Writing – review & editing, Resources, Methodology, Investigation, Conceptualization.

Declaration of competing interest

The authors declare that there is no conflict of interest.

Data availability

Data will be made available on request.

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi:10.1016/j.sfr.2024.100306](https://doi.org/10.1016/j.sfr.2024.100306).

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