



The impact of daycare programs on child nutrition, health and development in developing countries: a systematic review

Jef L Leroy, Paola Gadsden, Maite Guijarro

Overview



- Background
- Objectives
- Theoretical model
- Methods
- Results
- Discussion

Conclusions

- The reviewed studies suggest positive impact on child development
- The evidence on child nutrition and health outcomes is less clear
- More rigorously conducted studies on the impact of daycare programs in low and middle income countries are needed:
 - ▣ Variety of settings
 - ▣ Clear description of the counterfactual care scenarios
 - ▣ Intermediary variables that help explain the pathways of impact need to be measured and taken into account in the analyses
 - ▣ Alternative evaluation designs that minimize the risk of selection bias

1. Background

- Women in developing countries face competing demands on their time:
 - ▣ Child care, domestic activities, farming, fuel-wood, water, etc.
- Higher unemployment and lower working hours hypothesized to be due to these conflicting demands
- Daycare programs currently under way in several developing countries seek to promote labor force participation through relieving a key constraint, i.e. access to child care
- Zoritch *et al.*'s (2000) daycare review of US studies:
 - ▣ 8 published trials
 - ▣ Positive effects on child development and mothers' interaction with their children
 - ▣ Few studies looked at health outcomes
 - ▣ Emphasized the urgent need for higher quality studies in this area
- No systematic review of the evidence from studies in low and middle income countries has been conducted

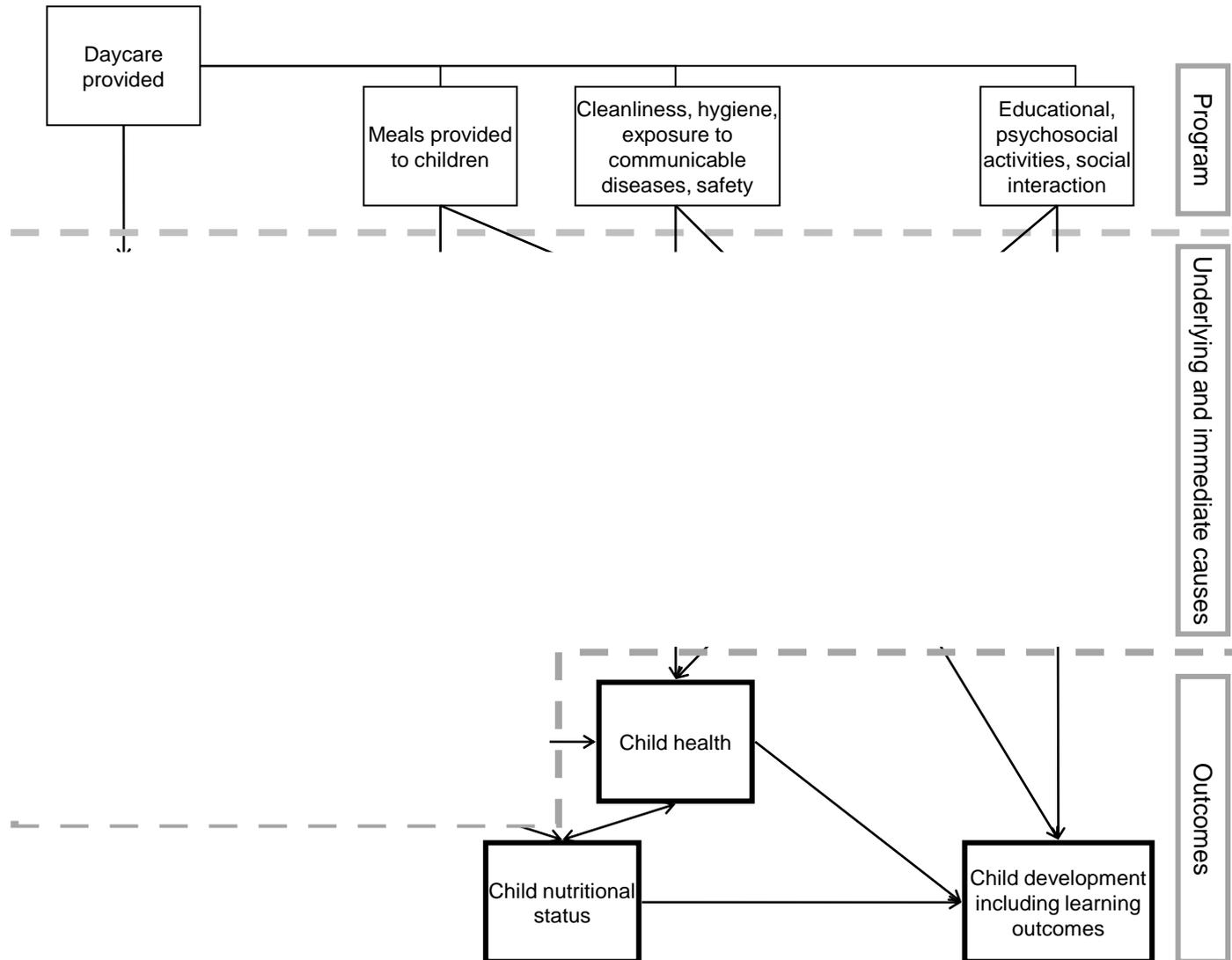
2. Objectives

- Review the impact of daycare on the health, nutrition and development of children under 5 in low and middle income countries:

Daycare definition: any type of institutional out-of-home care for children younger than 5 years of age, independent from who provided the daycare (government, private or a combination of both).

- Use a program impact theory approach to identify the pathways through which daycare may improve child outcomes

3. Theoretical model



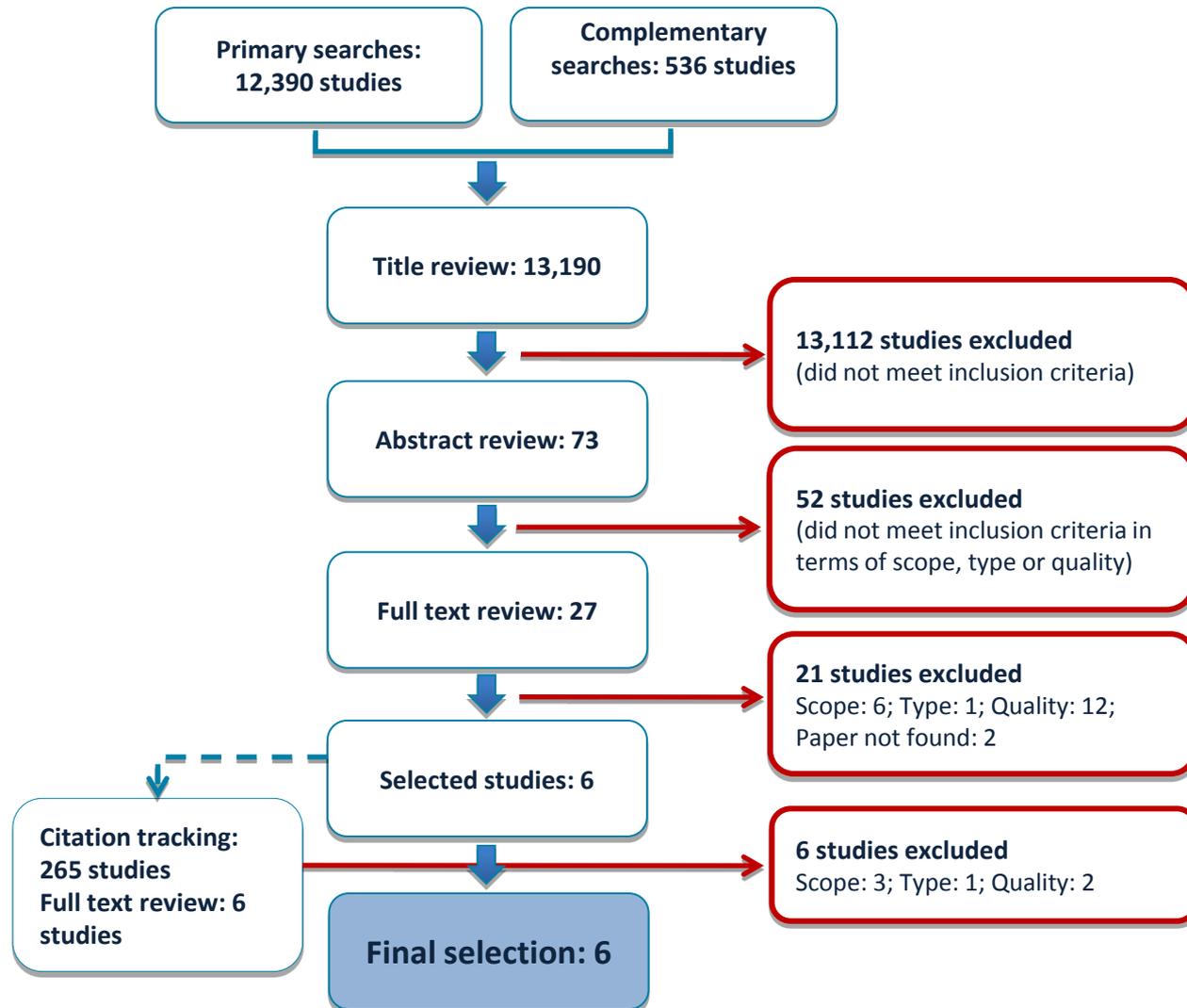
4. Methods

- Intervention studies
- Post 1980; no language restrictions
- 3 step approach: title, abstract, full text
- Studies excluded based on scope, type and quality
- Databases and other sources:
 - PubMed and EconLit
 - Grey literature: IDEAS, POPLINE, BLDS, LILACS
 - World Bank (including the JOLIS catalog), IFPRI
 - Papers suggested by colleagues and international experts in the field
 - Papers identified through reviewing the reference list of non systematic reviews
 - Forward and backward referencing

4. Methods (cont'd)

- Search string:
 - 'exposure' terms (representing the daycare programs) AND
 - 'outcome' terms (child health OR nutrition OR development) AND
 - 'subject' terms (children) AND
 - 'context' terms (developing countries)
- Selected studies:
 - In depth review; results summarized in tables
 - First step: impact of interest (i.e. nutrition, health and development)
 - Second step: program theory to identify pathways

5. Results: study selection



5. Results: selected studies

Country Reference	Intervention	Evaluation desian and analytic method	Nutrition	Health	Develop-ment
Colombia Attanasio <i>et al.</i> (2010)	<i>Hogares Comunitarios de Bienestar (HCB)</i> . Madres comunitarias provide childcare in their homes.	Tx: current attendance and exposure to HCB (fraction of life spent in HCB) Analyses: IV regression	Yes	.	.
Colombia Bernal <i>et al.</i> (2009)	<i>idem</i>	Tx: 1) a. attendance, b. <1, 2-4, 5-15 and 16+ mo of attendance; 2) months of exposure to the program (≤ 1 mo vs > 1 mo). Analyses: PSM (kernel)	Yes	Yes	Yes
Bolivia Behrman <i>et al.</i> (2004)	<i>Programa Integral de Desarrollo Infantil (PIDI)</i> Childcare in homes of women in low-income areas	Tx: attendance, cumulative impact (1-6, 7-12, 13-18, 19-24 and 25+ mo), ≤ 1 mo vs. ≥ 2 mo Analyses: matching	Yes	-	Yes
Guatemala Ruel <i>et al.</i> (2006)	<i>Hogares Comunitarios (HC)</i> Daycare provided by women in the community	Tx: attending daycare Analyses: matching by design (at the time of subject selection), PSM (nearest neighbor (NN) and kernel)	Yes	-	-
Argentina Berlinski <i>et al.</i> (2009)	Expansion of public pre-primary school provision (through construction of classrooms) from 93-99.	Tx: supply of pre-primary schools, attending pre-primary school. Analyses: Exogenous increase in pre-primary school availability (construction of 3724 classrooms from 93-99) as Tx variable.	-	-	Yes
Uruguay Berlinski <i>et al.</i> (2008)	Expansion of public pre-primary school classrooms from 1995-2002.	Tx: attended <1 y vs. ≥ 1 y, ≥ 2 vs. 1 and 3 vs. 2 y of preschool Analyses: within household estimator, using variability between siblings.	-	-	Yes

5. Results: outcomes

- Nutrition:
 - ▣ Growth: inconsistent (3)
 - ▣ Diet: positive (1)
- Health:
 - ▣ Inconsistent (1)
- Development:
 - ▣ Large positive effects on measures of child development (4)

5. Results: outcomes (cont'd)

□ Community based

- Columbia: EDI (Early development instrument) Social, PIPPS (Penn Interactive Peer Play Scale, 1-4), EDI Cognitive, Peabody Picture Vocabulary Test, Woodcock Johnson-Muñoz
 - Impact +2 to +10%, mostly in older children (>36 mo) with longer exposure (>16 mo)
- Bolivia: bulk motor, fine motor, language and auditory, and psycho-social skills
 - Impact +2 to +10%, mostly in older children (>37 mo) with longer exposure (+7 mo)

□ Preschool

- Argentina: long term effect in 3rd graders of one year of exposure
 - Mathematics and Spanish test scores: 8% increase
 - Positive effect on teachers' perception of attention (+12pp), effort (+21pp), participation (+16.5pp)
- Uruguay: long term effect of \geq one year exposure
 - Attendance: increased from 4.3 pp (7y) to 27.4 pp (15y)
 - Years of schooling: from -0.34 y (7y) to +0.78 y (15y)

5. Results: pathways

- Only 1 study (Guatemala) reported on pathways: improved diet not only due to improvements in daycare but also due to improved intake at home

6. Discussion

- Limited evidence, all in Latin America

- Key limitations

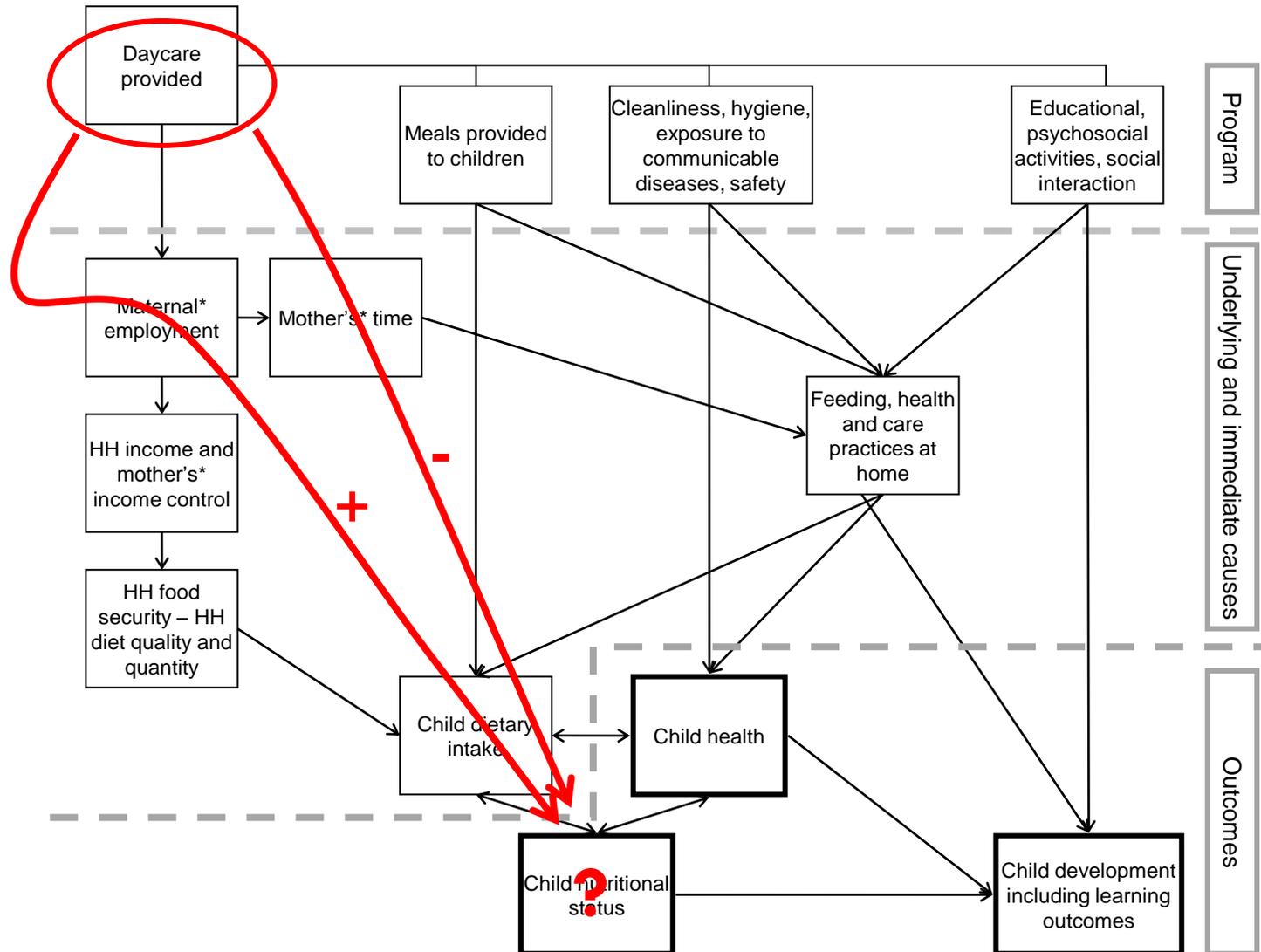
- Lack of information on “net treatment”:

- Net treatment = difference between care in program and care in the absence of the program

- Lack of information on pathways of impact

- Not clear whether net effect is always positive

6. Discussion



6. Discussion

- Limited evidence, all in Latin America

- Key limitations

 - Lack of information on “net treatment”:

 - Net treatment = difference between care in program and care in the absence of the program

 - Lack of information on pathways of impact

 - Not clear whether net effect is always positive

 - Credible counterfactuals

 - Selection bias is an important challenge

 - RCTs difficult to implement

Conclusions

- The reviewed studies suggest positive impact on child development
- The evidence on child nutrition and health outcomes is less clear
- More rigorously conducted studies on the impact of daycare programs in low and middle income countries are needed:
 - ▣ In a variety of settings
 - ▣ Provide a clear description of the counterfactual care scenarios
 - ▣ Intermediary variables that help explain the pathways of impact need to be measured and taken into account in the analyses.
 - ▣ Alternative evaluation designs that minimize the risk of selection bias.

Access to the systematic review

- 3ie Systematic Review 007

http://www.3ieimpact.org/admin/pdfs_synthetic2/SR%20007_Web.pdf

- Journal of Development Effectiveness, 2012: 4(2)

<http://www.tandfonline.com/doi/abs/10.1080/19439342.2011.639457>