Early Predictors of Violence and their Implications for Prevention

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Three Key Sets of Findings

1. Adolescent/adult violence is strongly predicted by conduct disturbance in the early school years; and child conduct disturbance itself is strongly predicted by persistent and pervasive aggression at age 3.

This represents a failure in the usual waning of normal early childhood aggression from 2 years
2. Other key early child variables important in the progression to conduct disturbance are:

i. insecure attachment

ii. poor intellectual development
3. Particular aspects of disturbed parenting are risk factors for violence perpetration, in particular, harsh or abusive parenting.

(Indeed, the effects of wider environmental factors are largely mediated by their impact on parenting).
Potential Targets for Preventive Intervention

• **Child attachment** – through promoting maternal sensitivity and understanding of infant experience, especially infant vulnerability and distress

• **Child intellectual development** – through providing cognitive stimulation

• **Child persistent, pervasive aggression** – through promoting positive parenting and reducing harsh parenting
Research Evidence

• Considerable research from developed countries demonstrates that early parenting interventions can effect improvements in all three child risk factors (i.e., persistent/pervasive aggression, insecure attachment, poor cognitive development)

• Little evidence from LMICs, where the rates of violence are highest
Our Work in South Africa

• Since 1994 Lynne Murray and I have been working with Professor Mark Tomlinson in SA

• Two of our studies are of particular relevance –
  i. the **Thula Sana** intervention trial which targetted infant attachment

  and

  ii. the **Book-sharing** training trial which targetted infant cognition
Khayelitsha:
• Poverty, mass unemployment, crime
• Widening economic gap
• Vast majority earn less than the required subsistence level
• Migratory movement & establishment of “squatter camps”
• Lack of established infrastructure & common amenities
3 Notable Early Findings

• A high rate of postnatal depression

• Maternal depression associated with marked insensitivity and intrusiveness with the infant

• A high rate of insecure infant attachment at 18 month
Khayelitsha RCT - targeting infant attachment security and maternal sensitivity

452 pregnant women invited
3 refused (0.7%)

220 randomised to intervention
229 randomised to control condition
Treatment Structure

• Therapists: trained community mothers

• Contact: Home visiting - 2x antenatally; weekly pp for 8 weeks, fortnightly for 2 months, monthly for 2 months - i.e., 16 sessions to 6 months postpartum

• Assessments: baseline, 6, 12 and 18 m
Specific content

• Supportive counselling

• Profiling individual infant characteristics and social capacities, via Interactive Assessment, including selected NBAS items (e.g., social orienting) to increase maternal sensitivity to infant vulnerability and emotions, and awareness of her infant as an independent psychological agent (‘The Social Baby’ principles - Murray, 2000)
Mother-infant interactions post treatment: **sensitivity** at 6 and 12 months (5point-scale)
Mother-infant interactions post treatment: **intrusiveness** at 6m (5point-scale) and 12m (event count)
Rates (%) of insecure attachment at 18 months
But, intervention effects on the Bayley MDI scores not as great

F(1, 261) = 2.82, p = .094, d = 0.21
Bayley MDI scores in secure and insecure infants
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Early Literacy in South Africa

• The Boston School of Education 2007 review ‘Progress in International Reading Literacy Study’ (2007), amongst 9/10 year old children in 40 countries:
  South Africa was at the bottom of the performance table (i.e. South Africa came 40th out of the 40 countries)

• SA learners in Grade 3 (children aged 9 years):
  58% of learners did not achieve the acceptable performance level (Department of Basic Education, 2011).

  Widespread recognition that this problem needs urgent attention
Dialogic Reading / Picture Book-sharing

- Dialogic Reading:
  - Active
  - Bidirectional relationship
  - Fluid exchange between two partners

More than in any other context BS involves extensive labelling of objects, questioning, commenting about the pictures, complex “decontextualized talk”

Three decades of positive evidence supporting BS:

*frequency of early book sharing predicts child literacy and language, independent of SES.*
Dialogic Reading / Picture Book-sharing

• Experimental evaluation of dialogic program spans 3 decades.
• Best results from:

  high intensity
direct parent training
combination of individual & group
everal intervention
Core elements of dialogic reading

- Active child participation
- Pointing and naming
- Follow the baby’s lead
- Active questioning (first “where”, then “what” & “who”)
- Animatation to emphasize, Lively voice, Repetition
- Elaborations and active linking of book content to the baby’s real world
Dialogic “linking” and elaboration (a)

Mother sees baby looking at illustration of mother brushing child’s hair in the book. She point to and names the object and action.
Dialogic “linking” and elaboration (b)

Mother then enacts the action by pretending to brush her own baby’s hair, continues to name the action while doing it, repeated a few times.
Dialogic “linking” and elaboration (c)

Baby then brushes his own hair, mother continues to name action. May point to action in book again to end sequence of “linking”.
Research in low-income countries

- Most applications in HICs
- Some application with low-income samples in HICs
- Samples in LMICs
  - Valdez-Menchaca & Whitehurst (1992) - Mexico
  - Opel, Ameer, & Aboud (2009) – Bangladesh
The RCT targeting child language and attention
(supported by the DG Murray Trust, the Felix Foundation, and Nick Robinson)

• Successful **pilot study** *(Cooper * et al * (2014) Early Child Education Journal)*

• Developed a **manualized intervention**
  – group didactic sessions (powerpoints)
  – illustrative videos
  – individual sessions of support
  – books and take-home cards for practice
  – video feedback technique
The RCT - method

• 91 mother-infant dyads from Khayelitsha
• Infants aged 14 to 16 months at baseline
• Dyads randomized to either
  i) an 8-week, weekly, programme in dialogic book-sharing (n=49)
  or
  ii) a control group who received no intervention (n=42)

• 82 dyads present at end of trial (9.9% attrition)
Assessment Measures

At baseline and again 9 weeks later.

**Primary Outcome Measures:**

1. **Child Language:**
   i. Infant Comprehension/Expressive Vocabulary: A self-developed measure (based on the principles of the Peabody Picture Vocabulary Test)
   ii. MacArthur-Bates Communicative Development Inventories Short Form, (CDI; Fenson et al., 2000) translated to isiXhosa

2. **Child Attention:**
   i. Early Childhood Vigilance Task (ECVT; Romero et al. (2012))
Sequence of naturalistic book-sharing

Coded using adaptation of Global Rating Scales of mother-infant interaction (Murray et al., 1996)

• Maternal dimensions:
  – Sensitivity
  – Pacing
  – Elaborations
  – Reciprocity
Maternal Sensitivity:
$t(80) = 3.01, p = 0.01$ (ES $d = 0.70$)
Pacing:
$U = 610.00, z = 2.09, p < 0.05$ (ES $d = 0.46$)
Elaborations:
\[ U = 457.50, \ z = 3.59, \ p = 0.001 \ (ES \ d = 0.79) \]

Quality of Elaborations:
\[ U = 403.50, \ z = 4.16, \ p = 0.001 \ (ES \ d = 0.92) \]
Reciprocity:
$U = 598.50, z = 2.20, p \leq 0.05 (ES \, d = 0.50)$

Active-Withdrawn:
$(t(80)) = 2.13, p < 0.05 (ES \, d = 0.50)$
Infant Language

Comprehension:
$U=592.50, z=2.27, <0.05 \ (ES = 0.25)$

Expressive Vocabulary:
$\chi^2=3.83, df=1, p<0.06 \ (ES = 0.22)$
CDI Understands & Says:
\[ U = 357.50, \ z = 4.43, \ p < 0.001 \ (EF \ d = 0.50) \]
CDI Understanding:
\[ t(80) = 3.25, \ p = 0.01 \ (EF \ d = 0.98) \]
Attention:
\[ t(80) = 4.91, p<0.001 \text{ (ES } d = 1.10) \]

Infant Attention - ECVT
ECVT Attention & Sensitivity

There was a significant indirect effect of group assignment on ECVT performance through maternal sensitivity ($b = 2.20$, BCa CI [7.536, 0.148]), representing a small effect of $\kappa^2 = 0.065$, 95% BCa CI [0.010, 0.019]

*p<0.05
*p<0.001
ECVT Attention & Reciprocity

There was a significant indirect effect of group assignment on ECVT performance through change in reciprocity ($b = 1.88$, BCa CI [6.083, 0.004]). This represents a small effect of, $\kappa^2 = 0.057$, 95% BCa CI [0.006, 0.170].

*p<0.05
**p<0.001
There was a significant indirect effect of the intervention on CDI (Understands & Says) through reciprocity, $b = 2.41$, BCa CI [6.747, 0.265]. This represents a small effect of, $\kappa^2 = 0.072$, 95% BCa CI [0.009, 0.187].

*p<0.05
**p<0.001
Mediation

Notably:

- the impact of the training on child language was mediated by enhancement of maternal reciprocity in book-sharing

and

- The impact of the training on child focal attention was mediated by enhancement of both maternal reciprocity and sensitivity in book-sharing
Conclusions

• These are extremely positive findings that endorse training in shared reading as a means of improving child cognitive development in LMIC peri-urban contexts

• The training programme is fully specified in a manual and can readily be disseminated

• We are developing a web platform for easy access to both the manual and the associated demonstration video-clips

• We are happy to work with any interested parties in translation and adaptation of this programme (English, isiXhosa, and French available)
Final Conclusions

• There is now a sound evidence base for addressing two of the early predictors of violence in LMIC contexts i.e., attachment and poor attention/cognition

• Sinovuyo?

• It is important that a composite intervention is developed which targets all three early risk factors which can then be evaluated in a LMIC context
Thank you

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