SPOTLIGHT ON – Survey of the Wellbeing of Young Children (SWYC)

1. Why have you chosen to recommend the SWYC?

The SWYC is a holistic tool, feasible to apply, easy to analyze, accessible (free to use), and with acceptable psychometrics proprieties in context. A key advantage over other instruments is that it offers information both about the family context, important to understanding developmental surveillance, while also screening for developmental delays.

Context: Our programme was set within an outpatient clinic for preterm babies and babies at high social risk. The intervention model we tested was designed to be low cost and feasible at primary health care level, but it was performed in a secondary level unit.

We carried out, in parallel, the SWYC adaptation and validation, which seems to be useful to health providers working on the primary care level.

What is the SWYC?

The SWYC is a form that can be filled by caregivers or by healthcare teams, personally or over the telephone for children aged 0 – 60 months.

Taken from the website: *Every SWYC form includes sections on developmental milestones, behavioral/emotional development, and family risk factors.* The SWYC has been translated into Spanish, Khmer, Burmese, Nepali, Portuguese, Haitian-Creole and Arabic. For specific details please consult the website.

Which version did you use?

https://www.floatinghospital.org/The-Survey-of-Wellbeing-of-Young-Children/Translations/Portuguese-SWYC

What Impact evaluation can you use the SWYC to measure?

We used a number of tools to measure impact. The unique contribution of the SWYC is that it collects information **useful for case management.** This requires a tool sufficiently flexible to be collected on several occasions, that can be used for planning, tracking progress towards targets, as well as evaluating the success of programme goals.

The SWYC is not, nor was it intended to be, a diagnostic tool. This level of detail is not required to measure the impact for our purposes. Should a child be screened positive for developmental delay, a more detailed tool is required to plan a specific therapeutic intervention.

What Key questions did you select the SWYC to answer?

Our definition of impact, therefore, includes not only child level change but also changes in the awareness, knowledge, and skills within the family.

We, therefore, had two key, interconnected questions.

A. Did the intervention positively impact the development and behavior of children up to 24 months?
B. How did the families' issues influence their performance?

In combination we were therefore interested to understand if the intervention created a closer family unit, focusing upon stimulating a positive interaction between mother and child.

2. Administration and Training:

The process of administration of the SWYC can be completed in 5-20 minutes

Depending on family´s literacy and the number of questionnaires you want to use (we can apply only milestones questionnaire, or only behavior questionnaire or only family risk factors or any combination of them). Another advantage is that the SWYC doesn´t require complex training. A 3 - 4 hours training is enough to prepare people to apply the forms and a further 2 hours to understand how to interpret the results. We have already trained students, professionals, and community health agents to apply the SWYC both personally and on phone calls, without difficulties.

3. Evaluation of the SWYC in context.

For details, please see

1. R.S. Moreira, L.C. Magalhães, C.M. Siqueira, C.R.L. Alves. "Survey of Wellbeing of Young Children (SWYC)": how does it fit for screening developmental delay in Brazilian children aged 4 to 58 months?, Research in Developmental Disabilities, Volume 78, 2018, Pages 78-88. https://doi.org/10.1016/j.ridd.2018.05.003. (http://www.sciencedirect.com/science/article/pii/S0891422218301161)
2. Moreira RS, Magalhães LC, Siqueira CM, Alves CRL. Cross-cultural adaptation of the child development surveillance instrument "Survey of Wellbeing of Young Children (SWYC)" in the Brazilian context. Journal of Human Growth and Development. 2019; 29(1):268-278. Ahead of print (http://jhgd.com.br/category/ahead-of-print/)

a. Reliability

The questionnaires Developmental Milestones, BPSC, and PPSC were considered unidimensional (KMO = 0.62 to 0.95) and had AVE of 0.52 to 0.73 and Cronbach's Alpha = 0.55 to 0.97, when applied to healthy children up to 5 years old in the South region of Brazil (cross-sectional study). (REF 2 above)

When applied to preterm babies from the control group, along the first 24 months, the Cronbach's Alpha varied from 0.54 to 0.83 in the SWYC milestones and from 0.61 to 0.83 in the BPSC questionnaires (behavioral approach) (Cohort study. Data not published yet).

b. Validity

Factor Analysis.

SWYC Milestones: confirmed the intended unifactorial structure, with the majority of items achieving loadings above 0.50. Only 5 Items presented factor loadings below 0.50, but they were included in the final analysis as their convergent validity was considered adequate. The factor analysis was appropriate for this set of items (KMO = 0.97), confirming the unidimensionality of the items. The set of items of the Brazilian version presented AVE = 0.73 and AC = 0.97.

Baby Pediatric Symptom Checklist (BPSC): All items had a high load factor, except for item 8 of the inflexibility construct (Does your child have a hard time with change?). Since the convergent validity of the inflexibility construct proved to be satisfactory, we chose not to exclude this item. The KMO values of each domain were higher than 0.62. According to the Kaiser criterion, all the BPSC constructs were unidimensional and presented AVE between 0.52 and 0.57; CA between 0.55 and 0.63 and CC between 0.68 and 0.71.

Preschool Pediatric Symptom Checklist (PPSC): All items presented positive loadings factor in the expected Bifactor model. In the General Factor, all loads were greater than 0.35 and factors related to Externalizing, Attaining and Attention Problems behaviors were greater than 0.20. The values of RMSEA = 0.02 and CFI = 0.98 indicate that the model was well adjusted for the Brazilian version.

Parent's Observations of Social Interactions (POSI): To be analyzed.

b. Concurrent validity: The concurrent validity between ASQ x SWYC showed Kappa 0,35-0,67 and AUC 0,67-0,82 (not published yet).

The SWYC (milestones questionnaire) has been compared to the ASQ and Bayley III in preterm babies under 24 months of corrected age. We summed the scores in each ASQ and Bayley domain to generate a total comparative score. We considered as being "at risk of delay" children scoring1 SD below the group mean on each test.

Preliminary results, related to the preterm cohort from the control group up to 24 months old, showed that the Spearman Correlation Coefficient between Bayley scale and SWYC was, on average, 0.26 and between ASQ-3 and SWYC, 0.64. Considering all measures from 4 to 24 months old (N=1069), the sensitivity of the SWYC comparing to Bayley scales was 34%, specificity 85,7%, and AUC=0.59. Compared to ASQ-3, the sensibility of the SWYC was 57.6%, specificity 90,6%, and AUC=0.74. (Data not published yet).

4. What is missing?

There are two other studies on the SWYC psychometrics proprieties going on in different settings and ages, whose data will be made available.

We also require sufficient data on contextually valid normative ranges to support impact evaluation, which takes into account local influences and expectations.