Parental engagement in preventive youth health care: Effect evaluation

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ABSTRACT

Objective: It is common for parents to have concerns or questions regarding their child. However, parental concerns are not always recognised by the youth healthcare professional. At the same time, not all parents agree with concerns identified by the professional. Identifying and agreeing on concerns is an essential step in the assessment of care needs within child health care. This article describes the effects of an innovative ‘GIZ’ methodology for joint assessment of care-needs developed to support the professional in engaging parents in assessing strengths, developmental concerns and care needs of the child and family. The current study compares parent-professional agreement on concerns and follow-up actions, and parents’ satisfaction with the consultation with and without the GIZ.

Methods: During this non-randomised controlled trial, 733 parents of children aged 0–12 and their professional completed a questionnaire after the consultation. In 526 assessments, the GIZ was used, and in 207 care as usual. Outcome measures were: concerns discussed, parent-professional agreement on strengths, concerns and follow-up actions and parents’ satisfaction with the consultation. Multilevel analyses were used to answer the research questions.

Results: In the GIZ group, parental concerns (specifically regarding parenting and the child’s environment) were discussed significantly more often. The use of the GIZ was associated with increased parent-professional agreement on concerns regarding the child’s development and increased agreement on the given advice. Parents’ satisfaction was significantly higher.

Conclusion: Using the GIZ within preventive child health care has positive effects on discussing parenting and environmental circumstances, on the parent-professional agreement and parents’ satisfaction.

1. Introduction

According to the United Nations’ Convention on the Rights of the Child, all children in the Netherlands have the right to Preventive Youth Healthcare (PYH) until their 18th birthday. PYH aims to contribute to a healthy and safe child’s development by offering information, identifying care needs and providing advice and support. Care needs are defined as the needs of ‘…those who have or are at an increased risk for a chronic physical, developmental, behavioural, or emotional condition and who also require health and related services of a type or amount beyond that required by children generally’ (McPherson et al., 1998) (p.138).

To determine care needs and provide adequate care, timely identification of problems in the development and wellbeing of children and their parents is crucial (Reijneveld et al., 2008). Previous research amongst families has indicated discrepancies between experienced family problems and specialised youth care utilisation (Bot et al., 2013). Over half of the families reporting severe problems did not use youth...
care, whilst around only 3% without severe problems used specialised youth care. Without adequate assessment, children with care needs may be missed or identified too late, which could affect their future health and wellbeing (Moffitt & Caspi, 2001; Geeraert et al., 2004). Over-treatment, meanwhile, leads to wastage of scarce healthcare resources and can undermine parental self-efficacy, problem-solving capability and wellbeing (Chioriero et al., 2015).

Several explanations have been offered for the inadequate identification of care needs leading to sub-optimal care. First, whereas engaging families in assessment and decision-making has long been recognised as a best practice in youth healthcare, in reality, family engagement is often limited (Légare & Thompson-Leduc, 2014). Engagement is about motivating and empowering families to identify their own needs, strengths and resources and to change things for the better actively (Steib, 2004). Research showed that parental engagement within the PYH could increase early detection of socio-emotional problems. It also positively affects parent-professional agreement on problems leading to strengths and resources and to change things for the better actively (Moffitt Reijneveld et al., 2017). Nevertheless, the assessment remains a one-dimensional process wherein the professional analyses risks and protective factors based on questionnaires or interviews. As parental concerns about a child’s psychosocial development and parenting issues are not always disclosed by parents or recognised by the Youth Healthcare Professional1 (YHP), effective prevention and treatment of problems may be impeded (Lynch et al., 1997; Reijneveld et al., 2008). Moreover, not all parents report concerns when a YHP identifies problems (Crone et al., 2016). Such disagreement negatively influences parental engagement and affects the professional’s partnership with families (Chovil, 2009).

Second, YHPs often lack time, skills and tools for implementing shared decision-making (SDM) (Smith et al., 2015). The assessments mostly aim at identifying risks and problems, and YHPs find it difficult to recognise and value parents’ perspective, knowledge and strengths (Boland et al., 2019). YHPs also tend to fill in for the parent based on all kinds of characteristics. (e.g., this mother will be fine; this parent must have many concerns.) Although SDM is part of professional guidelines and education, and motivational discussion training courses are offered from de last decades onwards, implementation of shared decision-making continues to require widespread attention (Netherlands Center Youth Heath, 2020; Netherlands Youth Institute, 2017; ter Haaf & van Veenendaal, 2016). Furthermore, the Netherlands is not represented in an international environmental scan of training for health professionals in shared decision-making (Dionf et al., 2016).

Third, currently validated instruments for care needs identification (e.g., Strengths and Difficulties Questionnaire) usually focus on specific sub-domains of child development (Goodman et al., 2003). However, for a comprehensive assessment, the existence and interaction of care needs in different domains must be considered to the child, parents, and the socio-cultural and physical environments (hereafter: environment) (Bronfenbrenner & Ceci, 1994).

To address these barriers, in the context of the Collaborative Academic Centre Together, where research, policy and practice work together improving care for youth, we developed the GIZ methodology. In Dutch, Gezamenlijk Inschatten van Zorgbehoeften (GIZ) can be translated as ‘Joint Assessment of Care Needs’ (NCJ, 2019). The GIZ can be seen as the social innovation that responds to a societal problem, namely, the mismatch between demand and effective care and unequal access to health care (Huang & Han, 2019). The GIZ is based on the

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1 YHP = Youth Healthcare Professional. The term YHP refers to child healthcare physicians and child healthcare nurses who have participated in this research, although the GIZ methodology has been developed for a broader target group, including youth care professionals.
optimally when three universally human basic psychological needs (i.e. autonomy, competence and relatedness) are fulfilled. Innovative features of the GIZ are the two visual tools: the Common Assessment Framework triangle (CAF) (Fig. 1a) and the Healthy Development Matrix (HDM) (Fig. 1b), creating a common language for a broad target group.

The CAF triangle creates a visual, clear content framework for the joint assessment interview. This tool ensures that the child or parent get knowledge and insight into the three dimensions needed for the healthy and safe growing up of youth: child development, parenting and family and environmental factors and their interconnection. Each dimension includes specific categories (e.g., feelings, parental experience, support of others). The triangle helps YHPs determine the focus of the conversation for the child or parent and zoom in on what is going well, what concerns there are and how these concerns interconnect.

The coloured, age-specific HDM is used to analyse development, parenting and environmental needs further. Parents get ‘the pen in their own hands’ when analysing their situation and determining their development/care needs. The professional asks clients to compare their situation with the description of the situation in the green column of the HDM and to put checkmarks in the column (from the green ‘no concerns’ to red ‘complex problems’) that best correspond to their analysis of their situation. Next, they then reflect on ‘what it takes to keep or get everything in green’. With the HDM, both parents/children and YHP’s get insight into the strengths that are present and into ‘what is needed’ to support the child’s development optimally. The descriptions in the green column can form the basis for prioritising and drawing up concrete goals and actions, which are then easy to monitor.

The GIZ has a clear structure consisting of three stages: introduction, analysis and SDM. During the introduction, the YHP makes the parents (or the young) comfortable and explains the purpose and structure of the conversation. Throughout the analysis, the YHP and parents discuss child development, parenting and environment to identify strengths and opportunities using the dimensions outlined in the CAF, thereby creating a common language and framework. When there are care needs, the YHP invites parents, using the HDM tools, to discuss the impact and urgency of the problems and raise their awareness of what affects optimal child development. The YHP uses his/her clinical expertise, the parents’ pre-answered questionnaires and the child health record. During the SDM stage, the YHP and the family jointly assess strengths and care needs and develop a support plan with goals and follow-up actions, which is monitored and evaluated with the HDM in subsequent consultations. Different target groups and age-specific visuals have been developed. There are GIZ tools for parents with children of 9 months to 24 years, and children and adolescents. The language is in line with the client’s perspective (e.g., what are my strengths and needs?; what are the strengths and needs of my child and family?). The child development section contains an age-specific description (e.g., social development; version 0–2 years: My child likes cuddling, verbal contact and can be easily comforted. Version 4–12 years: My child has boy/girlfriends, sets boundaries and respects the limits of others.) There are GIZ text versions, but also versions with icons for clients with a language barrier.

YHPs are trained in the GIZ during two four-hour sessions. Certified GIZ trainers followed a four-days training, including training on the job. They have a socio-medical or agogic background, trainers experience, and up-to-date knowledge of child development, childrearing and the field of PYH.

2.3. Participants

The study sample consisted of parents visiting PYH for their child’s routine consultations at the age of six months, two years and during primary school (five/six years). Primary school-aged children attending special education were excluded because the small number of these children made subanalyses impossible.

Fig. 2 shows the study population flowchart. In total, 1185 parents agreed to participate. Only children for whom both the parent and the YHP completed the questionnaire were included in the analyses, leading

Fig. 1a. Common Assessment Framework (CAF).
### What are the strengths and needs of my child and family?

#### Parents of children (0-23 years)

| WHAT IS IMPORTANT FOR MY CHILD AND HOW ARE WE DOING? | MY QUESTIONS GIVE ME ... | TENSION  | MY PROBLEMS CREATE ... | AN EMERGENCY |
|----------------------------------------------------|---------------------------|----------|-------------------------|------------|
| **DEVELOPMENT**                                    |                           |          |                         |            |
| 1 Physical development                              | My child is healthy.      | “I feel insecure. It’s difficult.” | A lot of tension | An emergency |
|                                                    | My child sees, hears, grows, eats, sleeps, and moves well, and develops a healthy lifestyle. | | “I am lost, not sure what to do.” | “I feel hopeless.” |
| 2 Cognitive development                             | My child learns well.     |          |                         |            |
|                                                    | My child is alert, curious, can focus and understands a lot. | | “I am panicking. Help!” |            |
| 3 Emotional development                             | My child has a positive self-image. |          |                         |            |
|                                                    | My child expresses and understands emotions, enjoys life and has faith in the future. | |                     |            |
| 4 Social and sexual development                     | My child is able to connect well with others. |          |                         |            |
|                                                    | My child has (intimate) friendships, is not bullied, sets boundaries and respects the boundaries of others. | |                     |            |
| **PARENTING**                                       | I provide the necessary basic care: food, care, safety, attention, structure, clothing, heating, hygiene, medical care, education. |          |                         |            |
| 5 Basic care and safety                             | I am able to provide positive parenting. |          |                         |            |
|                                                    | I accept the child the way they are and provide positive attention, support and guidance. | |                     |            |
| 6 Parenting                                         | I feel confident and enjoy being a parent. |          |                         |            |
|                                                    | I have a close relationship with my child. | |                     |            |
| 7 Being a parent                                    | I feel supported by my (ex) partner. |          |                         |            |
|                                                    | We work as a team on parenting issues. | |                     |            |
| 8 Mutual support parents                            | My family situation is good. |          |                         |            |
|                                                    | We are healthy, feel good, there is work, enough money, we live well, no stressful life events. | |                     |            |
| **ENVIRONMENT**                                     | My family is being supported by family, friends, neighbors, school and professionals. |          |                         |            |
| 9 Family                                            |                             |          |                         |            |
| 10 Community                                        |                             |          |                         |            |

#### WHAT DO WE NEED?

| INFORMATION | ADVICE | GUIDANCE | IMMEDIATE GUIDANCE | INTENSIVE SUPPORT |
|-------------|--------|----------|--------------------|-------------------|

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Fig. 1b. Healthy Development Matrix (HDM).
to the exclusion of 222 and 229 questionnaires in comparison and intervention groups respectively. For most of them, only the parent or the YHP answered the questionnaire and some returned empty questionnaires. YHPs who conducted less than five consultations were excluded, to prevent biased results when using multilevel analyses, which resulted in a total of 733 cases for analysis.

### 2.4. Procedure

An instructed professional asked parents with an invitation for a routine child health visit beforehand over the phone to participate in the research; parents received an information letter in advance and signed the informed consent, permitting us to use child health record data. Subsequently, they attended the consultation, either with the GIZ or care as usual. Then, the parents received a questionnaire to send back to the researchers. Parents who did not return the questionnaire first received a reminder by e-mail, with an online version of the questionnaire and then by phone call. YHPs completed a questionnaire after each consultation.

### 2.5. Measures

Questionnaires included background characteristics of children and parents and the following constructs: 1) parental and YHPs’ concerns about child development, parenting and environment and parent–YHP agreement; 2) parents’ report of discussing concerns and their need for further discussion; 3) parent–YHP agreement on follow-up actions; and 4) parents’ satisfaction with the consultation.

#### 2.5.1. Background characteristics

Parents were asked about their child’s gender and age, parents’ gender and age, parents’ highest educational level, number of life events, perceived parental wellbeing and history of care and referral. The academic level of both parents was determined by the highest education level completed and then classified into three categories according to The Dutch Standard Classification of Education: low, middle and high level. For the analysis, the highest educational level in the household was used.
Exposure to pre-formulated family and environmental life events during the past 12 months (e.g., birth of a brother/sister, divorce, unemployment) was registered in the YHPs’ questionnaire (Dutch Institute of Social Research). Life events were classified as follows: no life events or unknown, one life event and two or more life events.

Parents’ wellbeing was measured with the General Health Questionnaire (GHQ). This reliable 12-items questionnaire identifies minor psychiatric disorders in the general population (Sánchez-López & Dresch, 2008). Each item is rated on a 4-point Likert-type scale ranging from 0 (less than usual) to 3 (much more than usual). The summed scores range from 0 to 36, with higher scores indicating worse wellbeing.

Extra care two years before the consultation was based on data from the child health record. File information was classified as 0 (no extra care or referral) and 1 (extra care or referral).

2.5.2. Parental and YHP concerns and agreement

This was measured with 11 items completed by both parents and YHP; the items referred to domains related to child development, parenting and environment, indicating the frequency of concerns. Scores were transformed into 0 (having no concerns) and 1 (having some to frequent concerns). Agreement scores were calculated for concerns in each domain: scores were transformed into dichotomous variables: 0 (no agreement) and 1 (agreement on all items in that domain). We also calculated a less strict agreement score categorising whether or not the parent–YHP agreed that there were concerns on at least one of the items in child development, parenting or environment domain.

2.5.3. Parents’ report of discussing concerns and their need for further discussion

Parents were asked whether the 11 different items on concerns were discussed during the consultation (0 = no/not applicable and 1 = yes), and if they needed these concerns to be discussed (0 = no need to discuss/not applicable and 1 = must be discussed).

2.5.4. Parent–YHP agreement on follow-up actions

Parents and YHPs were asked to indicate whether the information or follow-up actions were discussed regarding concerns. Possible answers varied from ‘there are no concerns’ to ‘referral to additional support’. Follow-up actions were categorised into three groups: no concerns, advice and support. Parent–YHP agreement was categorised into either 0 (no agreement) and 1 (agreement with this follow-up action).

2.5.5. Parents’ satisfaction with the service

Parents’ satisfaction was measured using four sets of questions about (1) parents’ perception of what was discussed during the consultation, (2) their satisfaction with their engagement, (3) their satisfaction with child-specific communication and (4) their knowledge after the consultation.

1. Perception of what was discussed. Three questions were used based on the core elements of the GIZ (e.g., ‘Has the doctor/nurse discussed what is going well in the development and parenting of your child?’). The possible answers were 0 (no/1 do not know) and 1 (yes). Parents were classified as 0 (did not answer all three questions with yes) and 1 (answered all three questions with yes).

2/3. Satisfaction with engagement and child-specific communication. This was measured with five questions based on the Experience of Service Questionnaire (ESQ) (Brown et al., 2014). Satisfaction with child-specific information was measured with four questions of the ESQ and the Measure of Processes of Care (MOPC-20) (Siebes et al., 2007). Answer categories for the items of both satisfaction scales were 0 (no), 1 (not really), 2 (basically yes) and 3 (yes). Cronbach’s α values of 0.85 (engagement) and 0.86 (child-specific communication) indicated good reliability, respectively. The summed scores were calculated, ranging from 0 to 15 for engagement and 0–12 for child-specific communication, with higher sum scores indicating more satisfaction. As the distribution was skewed, the summed scores were transformed into dichotomous variables based on the mean score on satisfaction: 0 (average or less satisfied than average) and 1 (more satisfied than average).

4. Parents’ knowledge after the consultation. Four items measured whether parents had more understanding about child development and parenting after the consultation (much more to same as before). Answers were categorised into 0 (no increased knowledge) and 1 (much more and somewhat more understanding). A Cronbach’s α of 0.70 indicated good reliability. The summed scores were calculated, ranging from 0 to 4, with higher scores indicating greater understanding.

2.6. Statistical analysis

The background characteristics of parents and children were described using descriptive statistics. Group differences were assessed using chi-square tests and an independent t-test. Univariate and multivariate linear (continuous outcome) or logistic (binary outcome) regression analyses were also conducted to answer the research questions. The independent variable was condition (i.e., intervention or comparison group), and the dependent variables were concerns, concerns discussed, concerns that must be discussed, parent–YHP agreement on concerns and follow-up actions and parents’ satisfaction with the consultation. The findings were adjusted for differences in background characteristics that significantly differed between both groups with multivariate regression analyses. To adjust for possible intra-cluster correlation (given that parents were clustered within the participating YHPs), multilevel regression analyses were conducted. We conducted stratified analyses for parents with and without concerns to assess whether there were effects between the intervention and comparison groups on parents’ satisfaction with and without concerns. The Cronbach’s α value is only calculated for the satisfaction items, expecting these components to be inter-related. For the other outcome measures, such as whether parents have concerns about specific child developmental themes, we do not expect that these have a high inter-relatedness. Data were analysed using SPSS.

3. Results

3.1. Background characteristics of the parents and child

About half of the children in both groups were girls. Most parents were aged between 30 and 34 years when their child was born, completed a higher educational level, and more mothers completed the questionnaire. Life events were mostly absent or unknown, and average wellbeing score was 9.9 (SD = 4.1) out of 36, with higher scores indicating lower wellbeing. Comparing both groups, show more mothers, more 2-year-old children and less primary school-aged children participated, and less often a history of care in the comparison group (Table 1).

3.2. Parent–YHP concerns and agreement

Parents in the intervention group had significantly fewer concerns after the consultation than the comparison group: 26% versus 36% (Table A.2a). Overall, 29% of parents and 50% of YHPs reported having concerns. Parents had significantly fewer concerns than professionals (Table A.2a). However, in the comparison group, parents had significantly more concerns about parenting (10%) and the child’s environment (16%) than the YHPs (4% versus 5%) (Table 2).

Table 2 shows the parent–YHP agreement on concerns and results of the multilevel analyses comparing the intervention and comparison group. About 80% of both groups agreed that there were concerns/no concerns on all separate parenting and environment items. The comparison group, however, less often agreed about having concerns/no concerns on the different child’s development items than the intervention group (42% versus 56%; OR = 1.95, 95%CI = 1.23–3.11). The comparison group also less often agreed when using the less strict
agreement for child development (agreeing on having/not having at least one concern in the domains) (55% versus 64%; \( OR = 1.55, 95\% CI = 1.11–2.17 \)).

### 3.3. Concerns discussed and those that needed further discussion

The GIZ was significantly associated with discussing parenting (\( OR = 2.61, 95\% CI 1.20–5.66 \)) and environment (\( OR = 5.57, 95\% CI = 2.01–15.39 \)) (Table 3a). Table 3b shows that in the comparison group, themes related to parenting and environment were significantly less often discussed when parents wanted them discussed as compared to the intervention group.

### 3.4. Parent–YHP agreement on follow-up actions

In both groups, most parents and YHPs agreed on follow-up actions regarding support or referral or when no follow-up action was needed thanks to the absence of concerns. Parent–YHP agreement on advice as

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**Table 1**

Demographic characteristics of the study population.

|                          | Comparison | Intervention | P-value |
|--------------------------|------------|--------------|---------|
| Total sample of complete sets | N = 207 | N = 526 |         |
| Respondent characteristics |          |              |         |
| Who completed the questionnaire n (%) |          |              | <0.01 (0.007) |
| Mother | 193 (93.2) | 453 (86.1) |         |
| Father | 5 (2.4) | 47 (8.9) |         |
| Mother and father together | 9 (4.3) | 26 (4.9) |         |
| Age n (%) |          |              | 0.411 |
| <25 years | 3 (1.4) | 19 (3.6) |         |
| 25–29 years | 34 (16.4) | 79 (15.0) |         |
| 30–34 years | 72 (34.8) | 177 (33.7) |         |
| 35–39 years | 78 (37.7) | 186 (35.4) |         |
| ≥40 years | 20 (9.7) | 79 (15.0) |         |
| Age when child was born n (%) |          |              | 0.323 |
| <25 years | 3 (1.4) | 19 (3.6) |         |
| 25–29 years | 62 (30.0) | 127 (24.1) |         |
| 30–34 years | 85 (41.1) | 221 (42.0) |         |
| 35–39 years | 48 (23.2) | 135 (25.7) |         |
| ≥40 years | 9 (4.3) | 24 (4.6) |         |
| Highest education in the family n (%) |          |              | 0.266 |
| Low | 7 (3.4) | 11 (2.1) |         |
| Average | 47 (23.0) | 146 (28.0) |         |
| High | 150 (73.5) | 365 (69.9) |         |
| Wellbeing mean (SD) |          |              |         |
| Total score | 9.9 (4.1) | 9.8 (3.9) | 0.845 |
| Social management | 6.0 (1.8) | 6.0 (1.6) | 0.927 |
| Stress | 2.4 (1.8) | 2.4 (1.8) | 0.908 |
| Self confidence | 1.6 (1.3) | 1.5 (1.3) | 0.648 |
| Child characteristics |          |              |         |
| Gender n (%) |          |              | 0.460 |
| Male | 96 (46.4) | 261 (49.6) |         |
| Female | 111 (53.6) | 265 (50.4) |         |
| Age n (%) |          |              | <0.05 (0.035) |
| 6 months | 72 (34.8) | 190 (36.1) |         |
| 2 years | 85 (41.1) | 168 (31.9) |         |
| Primary school-aged children | 50 (24.2) | 168 (31.9) |         |
| Family characteristics |          |              |         |
| Life events n (%) |          |              | 0.999 |
| No life events or unknown | 148 (71.5) | 376 (71.5) |         |
| 1 life event | 49 (23.7) | 125 (23.8) |         |
| 2 and more life events | 10 (4.8) | 25 (4.8) |         |
| History of care and referral n (%) |          |              |         |
| Yes | 32 (15.5) | 172 (32.7) | <0.001 |

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**Table 2**

Differences between the intervention and comparison group in agreement on developmental, parenting, and environmental concerns.

|                     | Strict agreement | Parenting concerns | Environmental concerns |
|---------------------|------------------|--------------------|------------------------|
|                     | Developmental concerns | Parent–YHP Agreement (strict) | Parent–YHP Agreement (strict) | Parent–YHP Agreement (strict) |
|                     | n %               | n %                | n %                    | OR (95%CI) | * P % | n %   | OR (95%CI) | * P % | n %   | OR (95%CI) | * P |
| Comparison          | 207               | 26.6               | 51.2                   | 42.0       | 1.96 (1.24–3.11) | 0.005 | 4.8   | 86.0 | 1.26 (0.82–1.94) | 0.292 | 10.3  | 84.5 | 1.34 (0.85–2.12) | 0.201 |
| Intervention        | 526               | 19.0               | 41.8                   | 55.7       | 1.50 (0.97–2.31) | 0.067 | 4.6   | 88.0 | 1.52 (0.98–2.37) | 0.061 | 10.5  | 86.5 | 1.56 (0.97–2.53) | 0.073 |

* Multilevel analyses with two levels: YHPs and parents. Adjusted for age group of the child, whether mother or father completed the questionnaire and history of care and referral. P < 0.05.

Abbreviations: YHP = Youth Health Professional; Agree = Agreement; OR = Odds Ratio; CI = Confidence Interval.
Table 3a
Differences between the intervention and comparison groups’ condition on whether development, parenting, or environment aspects were discussed, stratified by parents with and without concerns on these domains.

| Domain was not discussed | Needed discussion Parenting (n = 185) | Needed discussion Environment (n = 214) |
|--------------------------|--------------------------------------|--------------------------------------|
| Development child discussed (n = 334) | Parenting discussed (n = 554) | Environment discussed (n = 595) |
| n | % | OR (95%CI)* | P | n | % | OR (95%CI)* | P | n | % | OR (95%CI)* | P |
| Comparison | 4 | 50.0 | 1 | 74 | 37.8 | 1 | 93 | 20.2 | 1 |
| Intervention | 12 | 16.7 | NA | 111 | 17.1 | 0.33 (0.16, 0.67) | 0.002 | 121 | 8.3 | 0.30 (0.12, 0.72) | 0.008 |

Table 3b
Differences between the intervention and comparison groups’ condition in whether parents needed a discussion on development, parenting, or environment, stratified by parents that reported that domains were or were not discussed.

|Domain was discussed| Did not need discussion Parenting (n = 548) | Did not need discussion Environment (n = 519) |
|-------------------|---------------------------------------------|---------------------------------------------|
| Development child discussed (n = 717) | Parenting not discussed (n = 595) |
| n | % | OR (95%CI)* | P | n | % | OR (95%CI)* | P |
| Comparison | 203 | 12.8 | 1 | 133 | 31.6 | 1 | 114 | 56.1 | 1 |
| Intervention | 514 | 17.1 | 1.34 (0.82, 2.19) | 0.240 | 415 | 43.1 | 1.81 (1.18, 2.79) | 0.007 | 405 | 56.5 | 1.10 (0.71, 1.69) | 0.670 |

4. Discussion

This study showed that when the GIZ was used, parents reported more conversation on parenting and environment. They also reported fewer concerns after the consultation than the comparison group. There was a more significant parent–YHP agreement on concerns regarding the child’s development and on whether or not advice was provided. Parents’ satisfaction with the consultation was higher. Parents with concerns reported higher satisfaction on child-specific communication.

Results showed that with the GIZ, concerns regarding parenting and environment were significantly more often discussed when parents needed it and YHPs identified more concerns. Lynch et al. (1997) reported that parental disclosure increases the likelihood that physicians will identify and intervene on psychosocial problems. This is also in line with the findings of Léveillé and colleagues regarding the FACNF upon which the GIZ is based (Léveillé & Chamberland, 2010). Professionals who used the FACNF made better estimates of complex situations, had a more holistic perspective and provided consistent interventions that better aligned with actual needs. By visually presenting possible subjects to discuss, the GIZ stimulated parental engagement and disclosure of concerns. This confirms past findings indicating that visual information strengthens understanding, memory, creative thinking, active participation and decision-making ability (Boland et al., 2019; Westermann, 2010).

Overall, about one-third of parents reported concerns about their child’s development, parenting or environment after their visit. This finding is comparable with other studies wherein the estimated prevalence of parental concerns on child’s development was 31.5%, although they did not include environmental concerns (Woolfenden et al., 2014). Notably, after the consultation, parents in the intervention group reported significantly fewer concerns on all domains. The characteristics of parents and child could not explain this difference. One explanation might be that during the conversation, more concerns were discussed with the GIZ, thus reassuring parents and leading to fewer inappropriate developmental expectations of their child and concerns after the consultation (Cox et al., 2010; Glascoe, 2003).

Professionals more often perceived themselves as having provided some advice than parents perceived themselves having received advice. This finding is regular. Brown showed that in three-fourths of visits wherein primary care professionals reported mental health counselling, parents did not report having counselling (Brown & Wissow, 2008).
Table 4
Differences between the intervention and comparison groups' conditions in agreement on follow-up actions.

|                  | Confirmation everything okay | Advise and information | Support |
|------------------|------------------------------|------------------------|---------|
|                  | Parent | YHP | Agree | OR (95%CI) | P | Parent | YHP | Agree | OR (95%CI) | P | Parent | YHP | Agree | OR (95%CI) | P |
| Comparison       | 85.5   | 71.5 | 73.4  | 1          |   | 10.1   | 79.7 | 25.6  | 1          |   | 7.2    | 18.8 | 85.5  | 1          |   |
| n = 207          |        |     |       |            |   |        |     |       |            |   |        |     |       |            |   |
| Intervention     | 82.1   | 63.1 | 67.7  | 1.06 (0.55, 2.04) | 0.867 | 11.2   | 51.9 | 54.4  | 2.37 (1.01, 5.56) | 0.047 | 9.5    | 19.8 | 82.5  | 0.85 (0.45, 1.62) | 0.622 |
| n = 526          |        |     |       |            |   |        |     |       |            |   |        |     |       |            |   |

* Multilevel analyses with two levels: parents and YHPs. Adjusted for age group of the child, whether mother or father completed the questionnaire and history of care and referral / *P < .05. Abbreviations YHP = Youth Health Professional; Agree = Agreement; OR = Odds Ratio; CI = Confidence Interval.

Table 5
Differences between the intervention and comparison groups in terms of satisfaction with the service; for the total sample of parents, parents with concerns and parents without concerns after the consultation.

|                  | Satisfaction on what has been discussed, score ≥ 3 | Satisfaction on engagement, score ≥ mean score | Satisfaction on child specific communication, score ≥ mean score | Increased knowledge after consultation, score > 0 |
|------------------|----------------------------------------------------|-----------------------------------------------|---------------------------------------------------------------|-----------------------------------------------|
|                  | n       | %    | OR (95%CI) | P | n       | %    | OR (95%CI) | P | n       | %    | OR (95%CI) | P | n       | %    | OR (95%CI) | P |
| Comparison       | 207     | 68.1 | 1          |   | 207     | 62.3 | 1          |   | 207     | 57.0 | 1          |   | 201     | 71.5 | 1          |   |
| Intervention     | 523     | 79.9 | 2.06 (1.26, 3.56) | 0.004 | 526     | 67.5 | 1.39 (0.87, 2.19) | 0.131 | 526     | 64.8 | 1.63 (0.96, 2.75) | 0.069 | 526     | 64.4 | 0.67 (0.47, 1.02) | 0.064 |
| Concerns after consultation |
| Comparison       | 75      | 65.3 | 1          |   | 75      | 49.3 | 1          |   | 75      | 46.7 | 1          |   | 75      | 76.0 | 1          |   |
| Intervention     | 139     | 77.5 | 1.64 (0.84, 3.18) | 0.147 | 139     | 56.8 | 1.37 (0.76, 2.49) | 0.297 | 139     | 58.3 | 1.84 (1.01, 3.35) | 0.047 | 139     | 79.1 | 1.10 (0.54, 2.23) | 0.793 |
| Without concerns after consultation |
| Comparison       | 132     | 69.7 | 1          |   | 132     | 69.7 | 1          |   | 132     | 62.9 | 1          |   | 132     | 68.9 | 1          |   |
| Intervention     | 385     | 80.8 | 1.92 (1.21, 3.03) | 0.005 | 387     | 71.3 | 1.16 (0.74, 1.79) | 0.521 | 387     | 67.2 | 1.27 (0.83, 1.92) | 0.268 | 387     | 59.2 | 0.63 (0.41, 0.96) | 0.033 |

* Multilevel analyses: adjusted for age group of the child, whether mother or father completed the questionnaire and history of care and referral / P < .05. Abbreviations: OR = Odds Ratio; CI = Confidence Interval.
Nevertheless, parents in our intervention group more often agreed with the YHP about having/not having had some advice. Higher agreement as to whether or not advice is given is an indication of better parent–professional communication (Perloff et al., 2006). In our study, better communication was also confirmed by increased parent satisfaction. Particularly in the GIZ group, concerned parents were more satisfied with the consultation.

4.1. Strengths and limitations

This study is the first to investigate the effects of the GIZ with a large sample in the context of PYH and with data on two types of informants. However, some limitations should be considered when interpreting our findings. First, as self-report questionnaires were used, parents in both groups may have under reported their concerns and over reported their satisfaction due to social desirability. This would apply to both groups and therefore does not explain the differences found.

Second, we were unable to randomise parents to either intervention or comparison group; we aimed to include PYH that had started the implementation at least one year ago to evaluate the GIZ. That professionals already had some experience in using it, diminished the chance that the (non)effect that we would find was merely due to limited implementation. However, we decided to include two different PYHs in the intervention group to diminish the chance that differences were only caused by organisational differences between the intervention and comparison groups and not by the GIZ. We demonstrated that parental concerns were generally lower, and rates of discussing/agreeing on concerns were higher in both intervention groups (see appendix).

Next, we did not include information on concerns before the consultation, as using a questionnaire before the conversation has its disadvantages, in particular pre-consultation influence. Thus, we were unable to assess whether the GIZ consultation had led to a lower prevalence of parental concerns. However, considering that the intervention group more often had a history of care, and our expectation that parents’ level of concerns after the consultation would be higher, lower level of concerns after the consultation in both intervention regions might be an indication that it is related to the GIZ. Another limitation is that in the comparison group, relatively more YHPs did not answer the questionnaires, especially with parents without concerns. Professionals may be less motivated to participate as a study comparison group. Furthermore, in both groups, the majority of parents completed higher education, whilst in the general population, only 45% in the age group of 25–45 years are highly educated. This should be considered when generalising the outcomes to other contexts. To recruit more parents with a low or secondary level of education in a follow-up study, we should use further recruitment and data-collecting strategies. Finally, to control for the intervention, only information on the use of the CAF (95%) and HDM (33%) was collected. The study, however, did not collect data on the GIZ implementation’s quality and whether it was used as planned. An observational study design in the future can provide us with more knowledge on the quality of the GIZ implementation.

4.2. Practical implications

The GIZ effect study took place between 2013 and 2016. From mid-2016, the management of the GIZ is transferred to the national youth health care organisation, which is responsible for national implementation among PYH and specialised youth care organisations. Twenty-six organisations, including thirteen PYH trained their professionals to work with the GIZ. The GIZ tools have also been updated based on practical experiences, and a digital GIZ has been developed. The GIZ helps the professional transform to analyse the care needs together with the client and decide together on the appropriate support. Effects have been shown in the setting of PYH with parents with young children in this study. Further research is needed to explore the effects of the GIZ on adolescents and in specialised youth care. It is also desirable to gain more knowledge about the facilitators and barriers to implementation.

5. Conclusion

The positive results in this study provide sufficient evidence for the large-scale implementation of the GIZ. The findings are of great importance for the support for the further implementation and assurance of the GIZ methodology, promoting shared decision-making in the care for youth in the Netherlands.

CRediT authorship contribution statement

Marjanne C.A. Bontje: Conceptualization, Methodology, Investigation, Resources, Writing - original draft, Visualization, Project administration, Funding acquisition. Ruben W. de Ronde: Validation, Formal analysis, Data curation, Writing - review & editing. Eveline M. Dubbeledeman: Validation, Formal analysis, Writing - review & editing. Mascha Kamphuis: Investigation, Resources, Writing - review & editing. Ria Reis: Conceptualization, Validation, Writing - review & editing, Funding acquisition. Mathilde R. Crone: Conceptualization, Methodology, Validation, Formal analysis, Writing - review & editing, Supervision, Funding acquisition.

Declaration of Competing Interest

None of the authors had financial or other conflicts of interest that could bias their work concerning this paper. No honorarium, grant, or other forms of payment was given to anyone to produce the manuscript.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.childyouth.2020.105724.

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