Behavioral therapy for functional constipation in childhood: health-related quality of life, emotional and behavior problems & parental child-rearing attitudes
van Dijk, M.

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General Discussion
In this final chapter the results of this thesis will be summarized and discussed. The research questions are addressed in a summary of the main findings and are followed by a reflection on these findings. Furthermore the limitations of the studies, clinical implications and suggestions for future research will be discussed.

**Summary of the main findings**

Chapter 2 provides in a review of the literature on FC followed by a description of the behavioral therapy protocol that was used in the RCT. This behavioral protocol has two age-related modules (4-8 years; ≥8 years) with similar content except for the systematic desensitization which is only used for the younger children. In the older children autonomy with regard to toileting is promoted.

In Chapter 3 the results are presented of a randomized, controlled trial which showed that behavioral therapy compared with conventional treatment was not more successful in treating FC and stool-withholding behavior. Both treatments resulted in an increase of defecation frequency and consequently a reduction of fecal incontinence episodes while stool-withholding behavior was less present. Conventional treatment resulted in a higher defecation frequency than behavioral therapy, and behavioral therapy was superior in addressing behavior problems.

In Chapter 4 we describe how children with FC with secondary fecal incontinence, aged 8 years and older, evaluate the emotional and social impact of having a defecation disorder. Especially fecal incontinence which is present in 84% of constipated children (1) is assumed to have a profound negative impact on the child's social and emotional functioning. With the particular relevance of this symptom, it is therefore important to measure disease-specific HRQoL in children with FC. The HRQoL in children with constipation-associated fecal incontinence was measured with a disease-specific questionnaire, the Defecation Disorder List (DDL). Item description showed that the majority of children reported relatively more emotional concerns than social consequences. Frequent episodes of fecal incontinence in the child were associated with lower HRQoL regarding emotional and social functioning but only explained a small amount of the lower HRQoL.

Chapter 5 describes the results concerning behavior problems in children with FC. Behavior problems were three to four-fold higher in children with FC compared with the Dutch general pediatric population. Clinical characteristics of FC were found to be associated with behavior problems. Especially a long duration of treatment was strongly associated with behavior problems. Children with nighttime urinary incontinence were also more likely to have behavior problems. Fecal incontinence and the production of large stools, two prominent features of FC, were exclusively related to externalizing behavior problems.

In Chapter 6 the results are presented of a study investigating the relation between parental child-rearing attitudes and FC in childhood. The study showed that parental child-rearing attitudes are associated with prominent symptoms of FC. The associations between parental child-rearing attitudes and FC were specifically found for older children (aged ≥ 6 years).
Reflections on the findings

Behavioral therapy: is it effective?

Based on our literature review (Chapter 2) we proposed a SORC model which is a theoretical framework that explains the development and maintenance of FC. According to this model, FC develops because a child with a disposition for fear consolidation starts to avoid defecation by withholding stools because of previous fearful defecation experiences. Then this avoidance behavior is reinforced by physical and psychological consequences resulting in persistent constipation with, in most children, secondary fecal incontinence. For the younger children (4-8 years) basic assumption of the behavioral therapy protocol was to treat FC by eliminating fearful and phobic responses that are elicited by stimuli associated with defecation and toileting. In play therapy children and parents were exposed to stimuli associated with defecation and toileting so that fearful responses would be replaced by relaxation and pleasure. With behavioral parent training (BPT) parents of younger (4-8 years) and older children (8≥ years) were taught effective behavioral management strategies to toilet train their child. Adequate toileting behavior was (re) acquired by the child and defecation/toileting avoidance behavior was further addressed. Moreover, in both age groups administering of rectal laxatives was prevented because it may elicit fear. It was expected that behavioral therapy would be more successful in treating FC compared with conventional treatment because avoidance responses would be specifically and thoroughly addressed. Secondary, it was expected that as a result of treating FC more successfully, behavior problems would also be more successfully resolved by BT.

Contrary to this expectation the protocolized behavioral therapy was found to be no more successful than conventional treatment in treating FC. We suppose that the laxatives and toilet training schedule as common denominator of both interventions have played a key role in addressing the stool-withholding behavior and thus the FC. Laxatives facilitate transport and expulsion of stools and will therefore increase defecation frequency. Moreover, the laxatives soften stools and will prevent the child having painful bowel movements. We suggest therefore that adequate laxative treatment and toilet training facilitate extinction of the conditioned aversion because it allows exposure to stimuli associated with defecation and toileting (2;3). Because of this important therapeutic effect of laxatives there was only little room left for BT to reduce defecation avoidance behavior by systematic desensitization and behavioral parent training. This stresses the important role laxatives have in the treatment of FC (4).

BT relieved more children from behavior problems, despite equal treatment success between the two interventions. This is an important result, as more than one third of constipated children in our study had coexisting behavior problems. The assumption that behavior problems are mainly the result of FC should be reconsidered (see Chapter 2 and 5) (5-8). Although the behavioral parent training (BPT) focused specifically on dealing with defecation and toileting problems in their child, we are not surprised that general behavior problems were tackled as well. The BPT element in BT may have strengthened overall parenting skills which lead to a reduction of behavior problems (9). Praise, engaging in activities, planned ignoring, and being clear, calm and direct are examples of parenting skills that were incorporated in the BT that have been shown by others to decrease behavior problems (9-11). It is known that especially parents reporting considerable behavior problems benefit from BPT elements compared with parents reporting no behavior problems (9). In our study, the beneficial effect of BT on behavior problems was only revealed at follow up and not directly after treatment ending.
This therapeutic effect has also been shown by others (11;12). Because parents are taught to use parenting skills at home targeted at toileting problems, we suggest that during follow up parents applied parenting skills to a broader range of target behavior and had the opportunity to practice and enhance these skills over time.

**Self-reported impact: what does it mean for children?**

Qualitative analysis of the individual items revealed that emotional functioning is in children with FC is considerably affected by having fecal incontinence. Most children are worrying about having feces in their underwear unnoticed and that others might smell it. Moreover, children are aware that being incontinent for feces is dirty. These self-reported emotional concerns are in concordance with parent’s reports of lower HRQoL with regard to emotional functioning in children having fecal incontinence and/or FC (13). Now we know about the worries of these children, one would think that the daily social life of children with constipation-associated fecal incontinence would also be profoundly affected. Previous studies showed social problems and withdrawn behavior in children with fecal incontinence (5;14-17). Moreover, passive behavior, a difficulty with disclosing emotional concerns, and social isolation is described specifically for adolescents with fecal incontinence (18). However, the majority of children in our study reported that they do not have fewer friends, that they don’t avoid undertaking social events and that they do not try to hide their disorder. Being bullied was reported in about one quarter of the children. Most children reported that they are happy with their live. Perhaps, few social problems are experienced because older children have learned to live with their defecation disorder over the years. Disease-specific problems have been shown to diminish with growing age in children and adolescents with organic fecal incontinence (19). Because fecal incontinence in children with FC may be perceived as an uncontrollable stressor, we also suggest that children used predictive control as coping strategy which is associated with better HRQoL (20-22). This means that the child is optimistic about the course of the disease. About 80% of the children in our study reported that they don’t think their defecation disorder will become worse in the future. On the other hand, this may also reflect that children look less to the future.

Another explanation for the few social concerns that were reported is that children have a strong wish to be normal and are inclined to report only obvious current problems. Parents are perhaps more concerned about the child’s development. In pediatric HRQoL research it is commonly found that parent’s perception of HRQoL is lower than their children’s self-reported scores (13;23-25). However, denial of the defecations problems and the consequences is frequently observed in children with long lasting FC and may complicate treatment because intrinsic motivation to change their bowel pattern seems to be lacking (14;18;26;27). In our SORC scheme, we hypothesize that the avoidance responses that are typical for children with FC finally result in complete denial of the defecation disorder because toileting and defecation stimuli become associated with the accumulated negative consequences. This avoidant coping strategy may be caused by all the negative consequences from which a constipated child has suffered many years. Alternatively, the behavioral pattern of passivity and avoidance in adolescents with fecal incontinence is also suggested to be part of a broader psychosocial developmental delay with specifically a low striving towards autonomy that is maintained by the family environment (18). For the psychological treatment it is recommended to promote autonomy, self efficacy and social skills. The therapist has to take an active role in establishing a effective therapeutic alliance with the child and his parents (18).
This study showed that other factors than fecal incontinence also affect the HRQoL of children with constipation-associated fecal incontinence. This is in line with studies in children with organic fecal incontinence and slow transit constipation that showed that QoL is also strongly influenced by how children perceive their psychosocial competencies. Especially when children feel incompetent regarding their school functioning this influences QoL (23;28). Because in other studies physical functioning was showed to be impaired in children with FC and slow-transit constipation, HRQoL is suggested to be mainly affected by physical symptoms accompanying FC such as chronic abdominal discomfort and painful defecation (13;23).

Behavior problems: the end or the beginning?
Researchers have always been interested in child psychopathology (i.e. behavior problems) in children with FC and fecal incontinence (5-7;14;15;17;29-39). Our results showed that behavior problems are common in children with FC. In addition, our study is the first that examined and established a mutual dependency between clinical characteristics of FC and behavior problems. Behavior problems negatively impact the daily live of parents and child, but are also suggested to complicate the management of FC (5-7;36;40;41). According to Dutch guidelines for childhood constipation developed in 2009, behavioral therapy should be added to standard medical treatment when children with FC have concomitant behavior problems, when there is a severe disturbed parent-child interaction related to the defecation disorder (i.e. parent feels incapable to manage defecation problem and feels exasperated) or when standard medical treatment fails in the second or first line (42). Clinicians treating FC should be aware of the clinical characteristics that are associated with behavior problems. Children at risk for behavior problems may be more easily identified and referred.

Causal relations cannot be drawn, because of the cross-sectional design of this study. Therefore we may only hypothesize about the pathways to explain the relationships that were revealed. The results of our RCT (chapter 3) provide insight in the direction of the relationships found between FC and behavior problems. In our RCT, the beneficial effect of behavioral therapy on behavioral functioning seemed not only to be related to the resolution of constipation-related symptoms. This indicates that behavior problems are not only a cause of FC, but that other mechanisms are also involved in the development of behavior problems in children with FC. For example a fearful child may cope with painful defecation with avoidance; and a child with an attention deficit may be less able to recognize and respond to rectal distention cues or urges to defecate resulting in FC. Moreover, a lack of adequate parenting strategies may be a common risk factor that may manifest in a child having FC and behavior problems concurrently. We also speculate that both FC and behavior problems involve common neurological/biological pathways. In our study a long duration of treatment for FC was a salient characteristic that was associated with behavior problems. In line with the findings of the RCT, we suggest that behavior problems are not only the consequence of a long lasting treatment for FC, but rather precede it resulting in failure of medical treatment. Treatment failure in children with behavior problems has been attributed to noncompliance with the treatment regimen caused by negative parental reaction to the child and his symptom and parent’s overall management style (7;36;40;41).

Insight in the exclusive relation of symptoms of FC with externalizing behavior problems can be obtained from the results of our RCT (chapter 3). Externalizing behavior problems were equally reduced in both interventions indicating that treatment success contributed to the reduction of these behavior problems. Externalizing behavior problems seem therefore mainly to be secondary to symptoms of FC. Research consistently showed that parental hostility is
associated with child externalizing behavior problems (43-48). We therefore hypothesize that
the association between FC and externalizing behavior problems is mediated by a negative
reaction pattern of parents on the fecal incontinence of their child. Elimination of fecal
incontinence by curing FC will ameliorate parent-child interaction and will consequently reduce
externalizing behavior in the child.

Although one third of our study population has internalizing behavior problems, no
association was found with clinical characteristics of FC. Perhaps other non-disease specific
factors contribute to the internalizing problems in children with FC. In our study older age was
found to be associated with internalizing problems. With older children having a longer history
of constipation, we postulate that internalizing problems may reflect the use of avoidant coping
strategies. Avoidant coping strategies have been described by us in older children with FC
(General Discussion; reflection on the findings of Chapter 4), and are behaviors and cognitions
intended to draw the person’s attention away from the stressor (49). There is evidence that
avoidant coping strategies are related to internalizing problems in children, and to parent-
child relationship problems (50). It may also be that the internalizing problems represent a
predisposition for fear resulting in FC, but now are separable constructs. Lastly, we suggest that
the externalizing behavior problems that are highly prevalent in children with FC put the child
at risk for developing co-morbid internalizing problems (51).

Parents matter: the complex interplay between parent and child
The role of parents in the development and maintenance of FC in childhood has been
acknowledged for a long time. Guidelines for childhood constipation recommend intensive
support, education, and demystification of children and parents in combination with a positive
and non-accusatory approach by the physician and parents. Moreover, the health care provider
explicitly explains that loss of feces in the underwear is overflow incontinence and thus
involuntary. These first steps are assumed to be crucial at the beginning of medical treatment
for FC in children (4;52;53). However, these recommendations are rather based on clinical
experience than on scientific evidence.

Although a problematic parent-child interaction is assumed to contribute to the development,
or at least, to reinforce FC in children, research on this topic is surprisingly limited. The results
of the current study provide evidence for a mutual interdependency of parenting factors and
FC in childhood. Moreover, the results showed that this dysfunctional interpersonal process
between parent and child exacerbates as the constipated child grows older. These results
support our SORC model that proposes accumulation of negative consequences of defecation
avoidance over time resulting in further persistence of FC. This will finally result in the child
associating all these consequences with toileting and defecating.

The results are also in line with literature on pediatric conditions suggesting that as the child
grows older, parent-child interaction becomes more complicated caused by conflicting interests.
In the child developmentally normal shifts to autonomy occur while parents want to help the ill
and vulnerable child, and feel responsible for the child’s health (54). However, it is also shown
that it is rather the certain combination of parenting styles than the style itself that is influencing
child development (55). Our results showed that for the older children, a high autonomy and
a high overprotective attitude as well was associated with higher fecal incontinence episodes.
Initially, these separate effects seem incongruent because a high overprotection indicates that
the parent has little regard for the autonomy of the child. However, our results replicate a typical
pattern that was also found in other studies investigating parental child-rearing attitudes with the APARI (56;57). These authors suggest that the combination of high levels of overprotection and autonomy encouraging attitudes indicates ambivalence in these parents. On the one hand they want to protect their chronically and vulnerable ill child, on the other hand they want to empower their ill child. However, other studies qualify such parent-child interaction patterns as parenting “with a double message”. It is known that discrepant communication patterns of parents leads to distress and behavior problems in the child (55). We carefully hypothesize that what initially seems an incongruent result represents inconsistent parenting, with parents encouraging a child’s autonomy, but at the same time they are psychologically restricting it.

This study did not answer the question whether dysfunctional parent-child interaction pattern are the cause or consequence of FC in the child. Previous research supported a personality difference between mothers with and without FC in their children (58). It is suggested that maternal personality directly influences toileting behavior of their children resulting in FC, because the mother has restrictive and forceful behavior leading to resistance and withholding behavior in the child. However, constipated children have been described as more stubborn and having a more difficult temperament. With other studies showing evidence that the development of problematic behavior in a child depends on the child’s interaction with its parents (goodness-of-fit theory)(59;60), we suggest that the quality of fit between parent and child characteristics contributes to the development of FC and needs further investigation.

Limitations

The findings of the present thesis should be considered in light of some limitations. For all studies, it should be taken into account that the majority of our study population consisted of constipated children referred by pediatricians to a tertiary center for treatment, whereas a minority of the population was directly referred by general practitioners and school doctors. Furthermore, we included predominantly white European population hampering generalization of our findings to other ethnic or cultural communities. It is recognized that migrant children with functional fecal incontinence in the Netherlands are rarely seen in the offices of general practitioners. For Turkish and Moroccan parents it is suggested that they do not seek help because feces are regarded as impure in Islamic culture (61).

RCT

A considerable, unexpected, methodological drawback of our RCT was that the additive effect of behavioral therapy could not be satisfactorily evaluated. For practical reasons, in this study the pediatric psychologists were partly responsible for adjusting laxative dosages during the behavioral therapy. The psychologists were inexperienced with regulating laxatives, and during behavioral therapy no rectal laxatives were administered to reduce anxiety inducing procedures. Because CT achieved a higher mean defecation frequency than BT, and based on information from the psychologist carrying out the behavioral therapy, we assume that in BT suboptimal laxative treatment was provided and that less monitoring of adherence to the mediation took place. This suggests that there was a difference in laxative treatment between the two treatment groups.
Another limitation concerns the high quality of the conventional treatment in the RCT restraining
generalization of findings to other settings where treatment takes place (i.e. primary hospitals,
general practitioner). In our tertiary hospital the pediatric gastroenterologists are highly
specialized and experienced in treating FC. Furthermore, the conventional treatment consisted
of an unusual high visit frequency and duration to strengthen the comparison between the two
treatments.

A limitation and a strength of the study was that the behavioral therapy protocol was as
much as possible closely followed by the therapists. Adherence to the protocol was verified
by regular meetings with all the therapists. At the same time this protocolized delivery may
also have lead to less treatment success than when behavioral therapy is administered as in
the “real world”. Normally, the therapist can temporarily interrupt or prolong the protocolized
therapy to thoroughly address obstacles hindering the learning process such as severe parent-
child interaction problem or limited abilities in child-rearing practices. We assume that strict
adherence to the protocol is one of the reasons for a (almost statistically significant) higher
drop-out rate in the behavioral intervention group.

Lastly, behavioral therapy showed a reduction of behavior problems over time. Although,
a follow-up assessment was conducted at 6 months after the 22-week treatment was ended,
longer term maintenance of this beneficial effect of behavioral therapy and treatment successes
of both interventions is unknown.

**HRQoL, behavior problems and parental child-rearing attitudes**

We emphasize that given the cross-sectional nature of the studies, causality cannot be
addressed. All our studies aimed at exploring associations with clinical characteristics of FC and
we may only hypothesize about the direction of the effects.

In addition, each instrument we used in the studies has its own specific limitations.
Unexpectedly, in our HRQoL study the constipation-related and treatment domain of the
Defecation Disorder List (DDL) (62) could not be used in the analysis because internal consistency
of these domains was too low. Consequently, physical and treatment-related HRQoL could not
be described in our study population. The Child Behavior Checklist (CBCL/4–18) (63) should
be used with some caution in our sample because symptoms of constipation are part of the
somatic complaints subscale (being constipated, feeling overtired, having pains, nausea,
stomach aches and vomiting). With regard to the Parental Attitude Research Instrument
(APARI) (62;64), we would like to emphasize that child-rearing attitudes were measured which
is one of many factors that determine actual child rearing behavior. Furthermore, it would
have been valuable if the attitudes of the parents in our study could have been compared with
norm scores of parents of healthy children. Norm scores of this questionnaire are available
(1986) (64), however, we consider these norms as outdated. Although parenting attitudes are
considerable stable cognitions, they are learned responses formed through interaction with the
environment and are assumed to be influenced by cultural and community factors (48;65;66).

Also the use of parents as informants about behavior problems in the child or child rearing is
a limitation. Parental report may be biased by the parents own psychological or health status,
and may reflect their personal experiences with the FC of their child. For example, parental
psychopathology is assumed to significantly account for parental ratings of internalizing behavior
problems in children. Moreover, low correlations have been shown between observational and
self-report methods. (67).
Clinical implications: the best of both worlds

This thesis showed that behavioral therapy with laxatives has no advantage over conventional treatment in treating FC in children. We also showed that behavioral therapy is superior in addressing behavior problems in constipated children. Behavior problems negatively impact daily live of parents and child, but are also indicated to complicate management of FC (5-7;36;40;41). This thesis also showed that behavior problems are common in children with FC, and we identified clinical characteristics of FC that are associated with behavior problems in constipated children. The above findings are clinically relevant because knowledge of risk factors facilitates recognition of constipated children with behavior problems by healthcare providers. Moreover, this thesis showed that an effective treatment for behavior problems in constipated children is available. In addition, in this thesis the HRQoL was evaluated of constipated children aged 8 years and older. We showed that fecal incontinence contributed to a lower HRQoL, and the children indicated that they have more emotional than social concerns. However, we presume that denial of consequences of the defecation disorder is present which may complicate treatment. One quarter of the children reported that they are bullied. Finally, we showed that parental child-rearing attitudes are associated with defecation and fecal incontinence frequency. The associations between parental child-rearing attitudes and functional constipation were specifically found for older children (aged ≥ 6 years).

Main messages & Recommendations:

- Medical treatment should remain the first treatment choice in treating FC in childhood. Children with FC should not be routinely treated with behavioral therapy to cure constipation.

- Treatment of emotional and behavior problems is needed in children with FC. A collaborative approach which integrates medical and psychological treatment is recommended for constipated children with concomitant behavior problems. Healthcare providers should refer constipated children with behavior problems for behavioral therapy while the healthcare provider regulates laxative treatment.

- Therefore, a screening for emotional and behavior problems should be incorporated in the diagnostic workup of FC. Early detection of behavior problems is greatly facilitated when quality instruments are deployed (68). Because the use of screening instruments in daily clinical practice is very time consuming for healthcare provider, a web-based application for the use of patient reported outcomes (PRO's) may be a valuable tool. Recently, positive experiences have been described with this method that obtains information from a patient without intervention of the healthcare provider through online questionnaires (69).

- If screening instruments are not available healthcare providers should be aware that constipated children with 1) treatment resistant constipation, 2) nighttime urinary incontinence, and 3) children aged ≥ 7 years are at risk for having emotional and behavior problems.
Periodic evaluation and discussion of the constipated child's disease-specific HRQoL should become an integral part of medical care. Beneficial effects have been reported on satisfaction with care and psycho-social well-being in other patient groups (70). Moreover, psychosocial barriers can be early identified and tailored intervention can be provided. For this purpose a web-based application can be used that includes the Defecation Disorder List to monitor disease-specific HRQoL in children with constipation-associated fecal incontinence.

Without a standard screening for HRQoL issues, the emotional and social impact of fecal incontinence, especially being bullied, should be addressed by the health care provider during control visits.

Because healthcare providers work with parents collaboratively in the management of FC parenting issues should be incorporated in the treatment. Besides the education and demystification of FC, healthcare providers should routinely discuss general parenting issues and toileting-specific problems. This encourages positive parenting practices, and may allow parents to develop better strategies for the conflicts that may easily develop regarding defecation and toileting (71). Moreover, discussing parenting issues will also result in early recognition of dysfunctional parenting. Referral to mental health services is needed when parenting issues are hindering treatment to be successful or when the parent-child relationship is at risk.

Future research

More intervention trials
Future research should investigate the effectivity of behavioral therapy for FC in children with emotional and behavior problems or for those who fail conventional treatment. In the current study behavioral therapy was provided unselectively to patients regardless of behavior problems or previous treatment failure. However, it is acknowledged that children with FC encompass a heterogeneous group of patients due to a lack of insight in the etiology of the disorder. Separate groups of children may be recognized within the broader population of children with FC based on differences in physical or psychological symptomatology. Treatment response may differ between subgroups, and treatment efficacy may even decrease when a treatment component is added while it is not warranted for a patient. High success rates (78-95%) have been reported for psychological treatment in children who failed conventional treatment (2;72-74). However, either these studies were of low methodological quality, they failed to use international criteria for FC or they lacked specific description of the treatment.

Children at risk for FC: longitudinal research
To improve treatment of FC, longitudinal research is needed to unravel the mechanisms underlying the development and maintenance of FC. Longitudinal studies in the general population will enable researchers to predict what psychosocial characteristics of child and parent, and their mutual interaction, are risk factors for the development of FC and co-morbid behavior problems. These findings will also contribute to the development of preventive strategies. Intervention in an early stage is crucial because it prevents that child and parent will end up in a vicious circle of defecation avoidance behavior and problematic parent-child interaction.
Further development of the DDL
Although, the Defecation Disorder List is a promising instrument, in our study two domains appeared to have considerable psychometric limitations. As a consequence disease-specific physical HRQoL could not be measured in our population of children aged 8 years and older. To broadly assess the impact of constipation-associated fecal incontinence, new items should be generated to restructure the physical complaints domain. It would be interesting to additionally develop a disease-specific domain of autonomy because specific problems are reported concerning autonomy in constipated children. Psychometric analysis for this new version of the DDL should of course be repeated. To gain insight in the degree of denial of the consequences of FC as reported by the child, comparison of parent-reported disease-specific HRQoL could be valuable. Lastly, comparison of disease-specific HRQoL between children with FC and children with organic fecal incontinence may reveal new information about the specific impact of FC.

Parents and parenting as new research topic
In this thesis an association was found between parental child-rearing attitudes and symptoms of FC. It is acknowledged that parenting factors play a role in the development and maintenance of FC and that highly involvement of parents is needed in the treatment of the constipated child. To our surprise research on parenting and parents is scarce in the research area of FC. Research on parents and parenting could focus on a multitude of topics that may influence children’s health: parenting behavior, parenting stress, quality of parent-child interaction, parental QoL, and parental mental health. With regard to future research on parenting behavior and quality of parent-child interaction we suggest to specifically focus on the constructs autonomy and overprotection.

Objective measures
Besides to self-report measures, future research should obtain data by using objective measures. This should include data concerning child behavior problems, parenting and quality of parent-child interaction. For example, methods have been recently developed to objectively assess the quality of parent-child interaction by videotaping semi-structured 15-minute observations and coding parent-child interaction on several scales (i.e. supportive presence, respect for the child’s autonomy, stimulation of cognitive development, quality of assistance, and hostility) (75). Objective measurements will enable researchers to further disentangle the relation between FC and these variables. It is not unlikely that new psychosocial factors of both parent and child will be associated with FC.
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