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fall asleep on their own. e estimated prevalence of early sleeping disorders in the rst two years of life ranges between 10 and 30% [6,10].

Feeding problems are also frequently temporary disorders that occur during weaning and introduction of puréed and solid food to the diet. According to the guidelines of the German Association for Child and Youth Psychiatry, a feeding disorder is said to be present when feeding is perceived by the parents as stressful, a meal requires more than 45 minutes, and/or the interval between meals is less than 2 hours [3]. e parent-child interaction during feeding is also strained. Due to fear of malnutrition, parents put pressure on the child, contributing to the perpetuation of feeding problems. Since meals in such cases require a great deal of time, the child is fed very frequently, and even during sleep, which results in infants/toddlers lacking hunger as a motivation to eat [6]. Zero to ree [1], a diagnostic system that classi es psychopathological pictures in the rst three years of life, distinguished six diagnostic subtypes of feeding disorders, de ned by

load; 21-40: small to moderate load; 41-60: middle load; 61-80: high load; 81-100: extremely high load. e HBS shows an excellent inter-rater reliability within a homogeneous professional group (psychology students) (*ICC*=0.92). As regards construct validity, signi cant correlations were found with both maternal sensitivity (CARE Index) (r=-0.20; p=0.001) and maternal distress (PSI) (r=0.14, p=0.05). In terms of the predictive validity, the risk of taking the child into care in case of high stress in the HBS was increased by 4.5 times (ibid.)

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For recruitment of high-risk families, we approached institutions that potentially had contact with pregnant women and mothers (with newborn children) burdened by psychosocial risk factors. We contacted maternity clinics, welfare o ces, pregnancy counseling services, midwife practices, pediatricians, family support institutions, counseling centers, etc. in Baden-Württemberg, Rheinland-Pfalz and Hessen. e burdened families in the comparison group lived beyond in the KfdN intervention areas. Furthermore, the comparison group families were not involved in family support programs that could be compared with the intervention of the family midwives in the project area ("interventions as usual"). Families were asked to participate through cooperating research partners. Following identi cation of a potential family, we sent relevant contact details to the members of the study group.

As soon as the consent to contact a family was received from the cooperating institutions, the family was contacted by a student assistant, specially trained for family contact and data gathering. e participating mothers were informed about the study and data protection at the rst appointment in their personal households. e families agreed to the data protection terms and conditions and signed the participation consent form. Following this, the stress levels were assessed (HBS, Measurement Instruments) (T0). If all the conditions for participation were met (a su ciently high stress level-i.e. a HBS value over 20 and adequate language pro ciency), the families were contacted again at the rst measurement point (T1: child's age ve months) and a set of surveys, including the SFS and PSI-SF was completed.

e next time each family was contacted was around the child's second birthday. Appointments were sought by telephone for the fourth measurement point (T4), which was conducted in the same way as the rst (T1). At Time 4, parents completed a set of surveys including the CBCL, ADS and PSI.

e varying numbers of test participants within the variables presented are the result of varying response rates.

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For the multivariate prediction of externalised and internalised psychic disturbations and concurrent sleeping problems at T4, regulatory disorder at T1, PSI-scales at T4 and ADS at T4 were entered step by step into a hierarchic regression equation (method enter) intended to account for di erent contributions to the variance explanation (R^2 *Change*). Potential confounding variables, such as maternal education level, household income, premature birth, infant`s gender and belonging to the group (IG vs. CG), were included in the model and tted in the equation.

e potential di erences between two groups, IG and CG, regarding continuous variables were tested with the Mann-Whitney-U-Test owing to the unful llment of the normal distribution requirement (Kolmogorov-Smirnov-Test signi cant, Table 3).

SFS: Questionnaires on Crying, Feeding and Sleeping; ADS: Allgemeine Depressionsskala; PSI: Parental Stress Index; CBCL: Child Behavior Checklist; K-S-Z: Kolmogorov-Smirnov-test: U-test: Mann-Whitney-U-test;

Additionally, for overview of associations between parameters at T4 (CBCL, ADS, PSI), as well as for testing potential multi-collinearity among independent variables, Spearman's rank correlations were computed. For all calculations, a signi cance level of 0.05 was determined (two-tailed). e statistical analysis of the data was conducted using the statistics program SPSS for Windows, Version 19.0.

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Table 3 shows descriptive statistics for all variables applied. No di erences between two subgroups, intervention and comparison were found.

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Table 4 shows highly signi cant positive rho correlations between all the tested parameters at T4.2010 1 Tf0.058hand PTfons were

at the fourth measurement point (R^2=0.55; corrected R^2=0.49; F=9.92; p=0.000) (Table 5).

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e SFS scale for "crying, whining and sleep problems" at T1 was a highly signi cant predictor (*Beta*=0.40, p=0.000), contributing to 15% of the variance of the children's internalised problems at T4 (R^2 *Change*=0.15, p=0.000). e inclusion of maternal stress parameter at T4 as "parental distress" (PSI) (R^2 *Change*=0.12, *Beta*=0.37, p=0.000), "dysfunctional parent-child-interaction" (PSI) (R^2 *Change*=0.05, *Beta*=0.30, p=0.01) and maternal assessment of child as "di cult" (PSI) (R^2 *Change*=0.05, *Beta*=0.41, p=0.008), signi cantly improved the explanatory power of the model. Separate contribution of maternal depressive symptoms at T4 was very small and statistically marginal (R^2 *Change*=0.02, *Beta*=0.22, p=0.053). Feeding problems at T1, as well as most of the sociodemographic variables, were not signi cant. Only low household income was a high signi cant predictor of internalized problems (*Beta*=- 0.26, p=0.009). e nal model explains 44% of the variance in the children's internalized problems at the fourth measurement point (R^2=0.51; *corrected* R^2=0.44; F=7.71; p=0.000) (Table 6).

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e SFS scale for "crying, whining and sleep problems" at T1 explained 11% of variance of concurrent sleeping problems at two years of age (CBCL) (R^2 *Change*=0.11, *Beta*=0.33, p=0.001, F=2.82, p=0.014) a er controlling for sociodemographic variables, child variables, PSI scales and ADS scale. All other variables were not signi cant and made no independent contribution to concurrent sleeping problems.

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e aim of this study was to examine the extent to which regulatory disorders in infants at ve months account for their psychic disturbations at 24 months. In line with other research our ndings indicate an association between early regulatory disorders and subsequent children's psychic problems [8,15,16,19,20]. Our results show a highly statistically signi cant association between crying, whining and sleeping disorders at ve months, and one and a half years later, for both externalized and internalized problems, controlling for the net income per household, mother's educational level, prematurity and the child`s gender, maternal distress and depressive symptoms, dysfunctional mother-child interaction and the mother's perception of her child being "di cult". In 24-month-old children, 17% of the variance in the children`s externalized problems and 15% of the variance in the children`s internalized problems were explained by crying and sleep problems during the 5th month.

Overall, in previous research, the negative in uence of the early regulatory disorders did not seem to be strong [8,12]. For instance, in a cohort study, Wake et al. [12] found that persistent sleeping disorders in the rst year account for only 1.4% of the variance of CBCL at two years. In their meta-analysis, Hemmi et al. [20] report a medium e ect of persistent excessive crying on both externalized (d=0.51) and internalized problems (d =0.50).

In our study, however, the association between early regulatory disorders and psychological/behavioral problems at two years was quite pronounced. is could speak for a phenomenon speci c to our socioeconomically disadvantaged sample. Mothers in a high-risk population are likely to be more challenged by di culties with their children and have fewer resources, such as social support or

access to counseling services, in comparison to their more fortunate counterparts. is, in turn, may contribute to the broadening of the children's initial regulatory problems. Children born into high-risk families appear to be more vulnerable to further stressors and maladaptive outcomes [25,35]. Similarly, Laucht et al. [19] found the highest rate of mental problems among children who had su ered multiple regulatory disorders as infants, and who were also subjected to high psychosocial risks.

It remains unclear why feeding problems at ve months show no in uence on children`s externalised or internalised symptoms at two years. Feeding disturbances in the 5th month, frequently observed during the introduction of solid food, are fairly common and most likely to be temporary [6,36]. It is possible that the feeding di culties observed during the 5th month are merely a transitive phenomenon with no clinical implications for the child's further development. In another study on this sample, we found as well no impact of feeding problems at ve months on the child`s development at 12 months [37].

e sociodemographic control variables barely explain the psychic problems su ered by the children. e fact that the high-risk sample belongs to a rather low socioeconomic class, presumably limited the variance. QTw TD(nrely negasitivesupact od thmainterner loinutcoed)Tj0 Tw T*by the childr`sor internalise6(problems.)TT/T1 0 1 Tf2.007 Tws 0 0 w

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