



# Social competence and psychopathology in early childhood: a systematic review

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## Abstract

The acquisition of social competence, such as showing prosocial behaviour (fulfilling others' needs) and social initiative (fulfilling own needs), constitutes one major developmental task in childhood and adolescence. Previous research suggests that in middle childhood, impaired social competences are related to childhood psychopathology, such as externalizing and internalizing disorders. As the period of preschool age is a particularly important time for both the development of social competence and early psychopathological symptoms, we conducted a systematic review to investigate the role of social competence in relation to early childhood psychopathology. Twenty-one clinical as well as subclinical studies published prior to September 2016 were included in a qualitative analysis of the relation between prosocial behaviour, social initiative, and early externalizing and internalizing symptoms in preschool age children (age 3–6). Effect sizes for each study were calculated if required information was available. Our review suggests that from early on in childhood development, externalizing symptoms are accompanied by prosocial behaviour deficits such as lower levels of helping or cooperating, whereas internalizing symptoms may be accompanied by either deficient or excessive levels of prosocial behaviour. Exhibiting social initiative such as initiating contact with others or communicating one's own needs seems to be impaired in children with internalizing symptoms. Implications for current theory and future research are discussed.

**Keywords** Social competence · Externalizing symptoms · Internalizing symptoms · Preschoolers · Prosocial behaviour · Social initiative

## Introduction

Social interactions form a substantial part of humans' everyday lives. Our skills to manage these interactions in a mutually satisfying way, the so-called social competences, have been studied intensively in developmental and clinical psychology [1–3]. In this review, we focus on the relation of social competence and early childhood psychopathology.

Due to the broad field of research regarding social competence, a variety of definitions has been proposed, such as “an organism's capacity to interact effectively with its environment” [4], “the attainment of relevant social goals

in specified social contexts, using appropriate means and resulting in positive developmental outcomes” [5] or “the ability to achieve personal goals in a social interaction while maintaining positive relationships with others over time and across situations” [6]. Most definitions have in common that they assume effectiveness in social interactions and applying appropriate means for social achievement as crucial for socially competent behaviour [7]. In the current review, we follow the definition by Rubin and Rose-Krasnor [6] who define social competence as fulfilling others' needs on the one hand and fulfilling own needs on the other hand [8, 9]. We chose this as our working definition for two reasons. First, empirical support for this suggested two-factor structure of social competence was found via factor analyses, for example, by Rydell, Hagekull, and Bohlin [10], who identified two dimensions of social competence: prosocial orientation (fulfilling others' needs) and social initiative (fulfilling own needs). Second, it incorporates two dimensions of social competence that are easily observable on a concrete behavioural level

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and, therefore, allow for a reliable measurement: Children often fulfil others' needs by showing prosocial behaviour, a well-studied phenomenon in early childhood [11–13]. Children also ensure that their own needs are being fulfilled, as other studies have shown on a behavioural level [14]. Therefore, a reliable and objective measurement of these competences is feasible. As proposed in recent research, we define prosocial behaviour in this review as helping, sharing, cooperating and comforting others and social initiative as social participation, leadership, setting limits, verbalizing own needs, and sociability [8, 10, 15, 16].

### Social competence in normative child development

The importance of social competence in normative development has been demonstrated by central empirical findings in developmental psychology. Already early in infancy and toddlerhood, children develop important socio-cognitive capacities that might be seen as precursors or correlates of later social competences. For example, a large body of research has demonstrated the occurrence of social attention [17], joint intentionality in social play [18], and social learning in early childhood [19]. Furthermore, attachment styles form an important foundation for children's interactions with others [20], as the relationships with their primary caregivers influences their social [21] and mental health development later on [22].

Regarding the two important dimensions of social competence, prosocial behaviour, and social initiative, especially prosocial behaviour has been intensively investigated by behavioural observation studies over the last few decades. It has been shown that from early on in ontogeny, normally developed children exhibit prosocial behaviour to a remarkable degree, evident, for example, in helping, comforting, informing, and sharing behaviour [11–13, 23]. However, throughout development, children's prosocial behaviours become more selective [24]. It has been demonstrated that in preschool age, situational factors [14, 25] as well as characteristics of the recipient [26, 27] start influencing children's tendency to behave prosocially. Therefore, the transition from toddlerhood before the age of three to preschool age seems crucial for children's understanding of other's needs and their prosocial behaviour [3, 28].

In addition, peer interactions become increasingly important in preschool age, for example, when entering kindergarten. Due to the need of managing conflicts or taking turns, these peer interactions form a substantial socialization function regarding children's social competence development [29]. Within this age span, children also start showing abilities to ensure their own needs in a socially adaptive manner [14, 30].

### Social competence and mental health in early and middle childhood

Another line of research has focussed on the essential effect of social competence on healthy development and adaptive social functioning [31, 32]. Recent research suggests that social competence influences academic achievement such as children's grades in academic courses [33] as well as their social achievement such as the quality of peer relations [34]. In their review of children's cooperation in limited resource situations, Green and Rechis [29] point out that socially competent children possess better conflict management skills, experience less peer rejection, and are more popular within their social group. Thus, children exhibiting social competence possess a fertile ground for the development of successful interpersonal relationships. This, in turn, may reduce the probability of other emotional or behavioural problems, as, for example, negative emotions due to social exclusion are less likely to arise [35].

The idea that the acquisition of social competence fosters positive development is also reflected by Masten and Cicchetti's [36] theory of developmental cascades, as well as in resilience theory [37], positive psychology [38], and prevention science [39]. Burt and colleagues [32] consider social competence as one major developmental task, a primary component of healthy functioning and development. Importantly, social competence assessed at 3 years of age has been found to exhibit high stability over 3 years [40]. Therefore, it appears that deficient social competence rarely declines on its own and should, therefore, be subject of study.

Given the crucial role of social competence for children's normative development and healthy functioning, a closer look at the relation between social competence and developmental psychopathology seems important. According to current reviews of prevalence data, 17–20% of children and adolescents suffer from mental disorders at some point in their development [41, 42]. These disorders cause severe psychological strain in terms of children's social and academic achievement and generally reduce children's quality of life and opportunities to participate in society [43, 44]. Importantly, epidemiological studies suggest that the onset of psychopathology in adulthood and adolescence can often be traced back to early childhood [45]. Preschool age represents a phase of various challenges for children, as they have to deal with less care by parents and have to get along with their peers in kindergarten. Thus, preschoolers have to develop increased abilities concerning effortful control and adaptive strategies for emotional regulation [46]. If they fail doing so, behavioural problems or poor social competence are likely to occur [47,

48]. Thus, a more detailed investigation of determinants and correlates of maladaptive development already in preschool age can be seen as a key task for current research.

In preschool age, psychopathology is often assessed on two major dimensions: externalizing and internalizing problems [49]. Externalizing problems commonly include acting-out behaviours such as rule violations and aggressive behaviour, while internalizing problems include withdrawal, depression, somatic symptoms, and anxiety. Other problem behaviours such as social problems, sleep problems, and attention difficulties have been clustered as mixed problems [49, 50], although some studies regard attention difficulties and impulsivity as indices for externalizing problems [35]. Importantly, persisting psychopathological symptoms of both dimensions in preschool age were found to be precursors for the development of manifest mental disorders in adolescence and adulthood [51–53] and should, therefore, be the subject of further investigation.

In addition to the dimensional classification of preschool age children's internalizing or externalizing symptoms, categorical classifications can also be applied. Hereby, symptoms are summarized into distinct categories of disorders such as depression, anxiety disorders, attention-deficit hyperactivity disorder (ADHD), oppositional defiant disorders (ODD) etc. [54]. An important advantage of dimensional classifications, however, is the possibility to measure both clinical and subclinical expressions of symptoms. Thus, the full range of symptoms beginning with early precursors of psychopathology and ending with full-blown psychological disorders may be classified [55].

Various studies have investigated the relation between social competence and psychopathology in childhood and adolescence. For instance, in a community sample, externalizing symptoms were found to be accompanied by reduced levels of global social competence measures such as acceptance by school classmates [32]. Other studies have been conducted with study samples, where manifest disorders are often already present. Studies focusing on specific syndromes of the externalizing spectrum such as ADHD, ODD or disruptive behaviour disorder (DBD) found social competence deficits in these children regarding global measures of social competence as well as prosocial behaviour. These deficits occurred, for example, in terms of reduced helping and sharing behaviour, social adaptive skills, affective empathy and empathy-induced prosocial behaviour [56–58]. The relation of externalizing symptoms and social initiative in later childhood appears rather understudied. However, aggression is found to be one major characteristic of many externalizing disorders [54, 56]. Aggressive children approach their peers to an overly strong extent, which may be interpreted as an excessive level of social initiative. Thus, one may argue that

children displaying externalizing symptoms show high levels of social initiative as they stand up for their own needs even at the expense of others.

In addition, internalizing symptoms in a community sample were found to be accompanied by reduced levels of global social competence measures such as acceptance by school classmates and having supportive friendships in young adulthood [32]. In addition, studies focusing on specific syndromes of the internalizing spectrum such as depression and anxiety also suggest deficits in global measures of social competence as well as prosocial behaviour. These deficits occurred, for example, in terms of children's reduced social acceptance and satisfaction, comforting and helping behaviour, social effectiveness and social skills [15, 16, 59–62]. A minority of studies did not find a relation between children's internalizing symptoms and their level of prosocial behaviour [63]. Furthermore, children with internalizing symptoms such as depression or anxiety were found to display social initiative deficits. These deficits occurred, for example, in terms of children's sociability, engagement in suggesting play activities or assertiveness [15, 16, 64].

## The current review

Despite differences in operationalization, in most of the aforementioned studies, children's social competence was strongly related to their psychopathological symptoms in the externalizing and internalizing spectrum. However, the majority of clinical child research has been conducted with school age or even high school age children suffering from full-blown mental disorders, making inferences about causal pathways between social competence and psychopathology difficult. Hence, in the current review, we summarize recent studies investigating the relationship between social competence and early psychopathological symptoms (internalizing and externalizing) in preschool age samples (age 3–6). Besides the evaluation regarding findings on global measures of social competence, study results were specifically clustered according to the two dimensions prosocial behaviour and social initiative [6, 10].

We hypothesize that already in preschool age, externalizing symptoms will be accompanied by deficits in global measures of social competence and prosocial behaviour. We also hypothesize that children with externalizing problems will show elevated levels of social initiative, standing up for their needs even to an egoistic extent. We further expect to find reduced levels of global measures of social competence and prosociality in children with internalizing problems. Given that internalizing problems comprise withdrawal, we hypothesize that children with internalizing symptoms will show deficits in social initiative.

## Method

Our review was conducted in accordance with the guidelines outlined by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement [65]. The literature search was primarily conducted within the literature databases PsycInfo, PubMed and Google scholar, carried out by the first author. As this article focuses on the association between social competence and psychopathology in preschoolers, the following search terms had to appear in the title or keywords to narrow the broad field of research on social interactions among children: (“social competence” OR prosocial OR prosocial OR “social initiative” OR “social skill\*” OR “social interaction\*”) AND (interna\* OR externa\* OR psychological OR psychopathology OR depress\* OR anxi\* OR hyperact\* OR ADHD OR attention OR impulsiv\* OR disruptiv\* OR conduct OR defiant OR oppositional OR emotional OR behavioural). Thus, inclusion criteria were studies that assessed social competence, prosocial behaviour and/or social initiative in relation to psychopathology in preschool age children (around 3–6 years). Psychopathology could be examined on a dimensional level (externalizing or internalizing symptoms) or on a categorical level (concrete disorders such as depression or anxiety). Only publications in peer reviewed scientific journals in the English language published prior to September 2016 were included in the primary research. Additionally, a hand search following the same inclusion criteria was conducted in accordance with the ancestry approach [66]. Exclusion criteria were samples that did not include preschool age children, intervention studies, a primary focus on the development of a new diagnostic tool, a specific subpopulation being analysed (such as obese children), the relation between children’s psychopathology and social competence being only a subordinated question or gender differences being a main

focus. There was no registered protocol. The procedure and results of the literature search are depicted in Fig. 1.

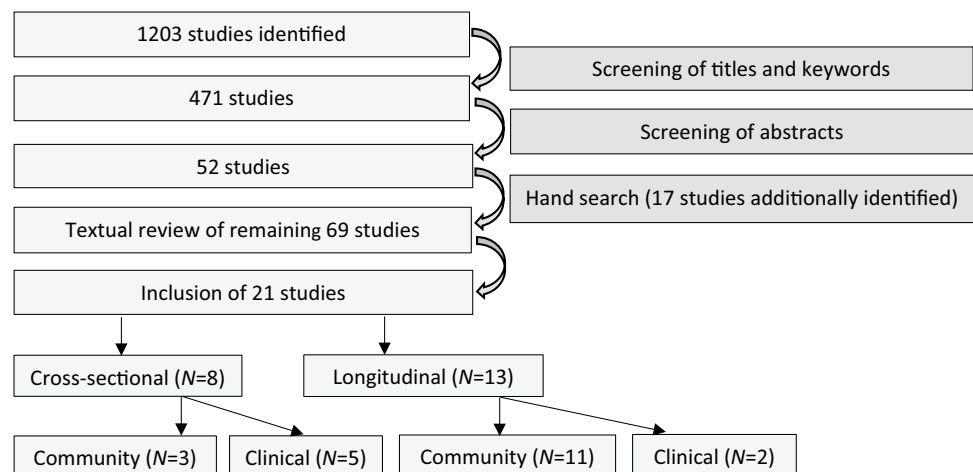
In the final selection of studies, we also examined the presence or absence of following supplementary methodological aspects: multi-informant assessment of symptoms/competence (at least two different perspectives), multi-method assessment of symptoms/competence (at least two different methods), categorical/dimensional assessment of symptoms (categorical: the study assigned children to a clinical group exhibiting symptoms or to a healthy control group, dimensional: children’s symptoms were measured on a continuum).

## Results

Table 1 shows the 21 studies included in the review. For each study, children’s age, sample size, methods of assessing children’s symptoms, the operationalization and assessment of social competence, and the main findings are reported. If sufficient information was provided, effect sizes were calculated, converted to  $d$  if  $r$ -,  $f$ - or  $\eta^2$ -values were given as original effect size measures [67, 68] and rounded to 2 digits. According to Cohen [69],  $d=0.20$  is considered a small effect,  $d=0.50$  a medium effect and  $d=0.80$  a large effect. The table further differentiates between longitudinal and cross-sectional studies and between clinical and community samples. In case of a longitudinal design including both preschool and school age children, results of the preschool age assessments were focused on. Criteria for a clinical study were the use of instruments that allowed for a clinical diagnosis and the assessment of clinically relevant symptoms in at least a subset of the sample.

In total, 16 studies of all 21 studies comprised prosocial behaviour, 4 studies comprised social initiative and 12 studies comprised global measures of social competence (exclusively or in addition to prosocial behaviour and social

**Fig. 1** Process and results of literature research



**Table 1** Overview of studies

Author(s)	<i>M</i> <sub>Age</sub> (years)	<i>N</i>	Assessment of children's symptoms	Operationalisation and assessment of social competence	Main finding (effect size)
<b>Cross-sectional, community samples</b>					
Hughes, White, Sharpen and Dunn [70]	4.3	80	EXT via SDQ and teacher interviews <i>N</i> = 40 EXT children <i>N</i> = 40 healthy controls	Antisocial behaviour, response to emotion and prosocial behaviour via observations of dyadic child interactions in nurseries	EXT: more antisocial behaviour ( <i>d</i> = 0.46), less prosocial behaviour ( <i>d</i> = 0.90) than controls
Rudolph and Heller [71]	4.4	32	EXT via CBCL <i>N</i> = 10 EXT children <i>N</i> = 22 healthy controls	Prosocial and aversive behaviour via 2 conceptually derived scales; interpersonal problem solving via social dilemma interviews	EXT: less socially competent problem-solving strategies than controls ( <i>d</i> = 1.3), less prosocial behaviour ( <i>d</i> = 0.95), more aggression ( <i>d</i> = 0.90)
Thorell and Rydell [72]	4.0–4.11	559	ADHD via ADHD Rating Scale IV <i>N</i> = 60 EXT children <i>N</i> = 499 healthy controls	Prosocial orientation and social initiative via SCI	EXT: less prosocial behaviour ( <i>d</i> = 0.70) than controls; no between-group differences in social initiative
<b>Cross-sectional, clinical samples</b>					
DuPaul, McGoey, Eckert and VanBrakle [73]	4.0	94	ADHD via CTRS-R, SIDAC, ADHD-IV <i>N</i> = 58 with ADHD symptoms <i>N</i> = 36 healthy controls	Social cooperation, social interaction and social skills standard score via PKBS	EXT: less social cooperation and social interaction, fewer social skills ( <i>d</i> = 1.35–2.13)
Hay, Hudson and Liang [74]	4.0–4.2	93	EXT via SDQ, ADHD and ODD via PAPA Dimensional approach	Prosocial behaviour via SDQ	EXT: less prosocial behaviour ( <i>d</i> = 0.47–1.40)
Julvez, Forns, Ribas-Fitó, Torrent and Sunyer [75]	4	467	ADHD via ADHD-DSM-IV form list Dimensional approach	Considerateness, task orientation, extraversion, verbal facility, response to unfamiliar via CPSCS	EXT: less social competence (no effect size)
Webster-Stratton and Lindsay [76]	4–7	120	Oppositional defiant disorder or conduct disorder via ECBI, CBCL and DSM-III interview, PBQ, PPS-I CARE, DPICS-R <i>N</i> = 60 EXT children <i>N</i> = 60 healthy controls	Prosocial behaviour via TASB, social problem solving via WALLY game, social acceptance via PCSC and AGG, dyadic peer interactions via PPS-I CARE, child–parent interactions via DPICS-R	EXT: higher levels of negative conflict management skills ( <i>d</i> = 0.61), less socially competent play interactions with peers ( <i>d</i> = 0.32–0.96), more deviance interacting with parents ( <i>d</i> = 0.69–0.80), less prosocial behaviour ( <i>d</i> = 0.82) and social acceptance ( <i>d</i> = 0.93), fewer positive social skills ( <i>d</i> = 0.40) than controls
Zahn-Waxler, Cole, Welsh and Fox [77]	4–5	82	EXT via CBCL, TRF, ECBI and PBQ <i>N</i> = 31 high risk children <i>N</i> = 28 moderate risk children <i>N</i> = 23 low risk children	Prosocial behaviour via behavioural observation and interpersonal dilemma interviews	EXT: no difference between groups concerning prosocial behaviour



Table 1 (continued)

Author(s)	$M_{Age}$ (years)	N	Assessment of children's symptoms	Operationalisation and assessment of social competence	Main finding (effect size)
Longitudinal, community samples					
Blandon, Calkins and Keane [78]	t1: 2.6 t2: 5.8	253	t1: EXT via CBCL Dimensional approach	t2: Perceived peer acceptance via PSPCCA and peer nominations; social skills and problem behaviour via SSRS	EXT: more problem behaviour ( $d=0.47$ ), fewer social skills ( $d=0.37$ ) and less peer likability ( $d=0.32$ ) at t2
Bornstein, Hahn and Haynes [35]	t1: 4.0 t2: 10.2 t3: 13.8	117	t1: EXT and INT via PBQ t2: EXT and INT via CBCL and TRF t3: EXT and INT via CBCL and YSR Dimensional approach	t1: Peer acceptance, popularity and quality of close relationships via PCPCCA, FI and VABS t2: Peer acceptance, popularity and quality of close relationships via SPPC, POPS, FI and VABS t3: Peer acceptance, popularity and quality of close relationships via SPPA, AICQ and VABS	EXT: Negative association between social competence at t1 and EXT at t2 ( $d=0.36$ ) and t3 (standardized indirect effect = 0.14) INT: Negative Association between social competence at t1 and INT at t2 ( $d=0.39$ ) and t3 (standardized indirect effect = 0.09)
Flouri and Sarmadi [79]	t1: 3 t2: 5 t3: 7	9850	t1–3: INT via SDQ t1–3: EXT via SDQ Dimensional approach	t1–3: Prosocial behaviour via SDQ	EXT/INT <sup>a</sup> (t1, t2, t3): less prosocial behaviour at t1, t2 and t3 ( $d=0.39-0.91$ ) <sup>a</sup> total difficulties score reported
Groeben, Perren, Stadelmann and von Klitzing [80]	t1: 5.2 t2: 6.2 t3: 9.2	167	t1–3: INT via SDQ and BPI Dimensional approach	t1–3: Social initiative and prosocial behaviour via questionnaire data of a self-developed diagnostic tool	INT(t2): less social initiative at t1 ( $d=0.33$ ), High levels of prosocial behaviour in combination with low levels of social initiative as a risk factor for later INT ( $d=0.32$ , $d=0.47$ )
Hay and Pawlby [81]	t1: 4 t2: 11	149	t1: EXT and INT via CBCL t2: EXT and INT symptoms via SDQ and CAPA Dimensional approach	t1: Cooperation via behavioural observation (TRCB) and cognitive abilities (Mc Carthy CCA) t2: Prosocial behaviour via SDQ	EXT(t2): less cooperation at t1 ( $d=0.63$ ), INT: extreme worries about family members ( $d=0.66$ ), no association with prosocial behaviour
Korhonen et al. [82]	t1: 4–5 t2: 8–9 t3: 16–17	261	t1–t3: INT and EXT via CBCL t3: INT and EXT symptoms via YSR Dimensional approach	t1–t3: Social skills and relationships via CBCL	INT: trajectory of INT negatively associated with social competence at t2 and t3 (no effect sizes) EXT: trajectory of EXT negatively associated with social competence at t3 (no effect sizes)
Kouros, Cummings and Davies [83]	t1: 6–9 t2: 11–14	235	t1, t2: EXT via CBCL Dimensional approach	t1: Prosocial behaviour, social problems via CBS t2: Prosocial behaviour, social problems via SDQ	EXT(t1): more social problems at t1 ( $d=0.77$ ) and t2 ( $d=0.85$ ), EXT(t2): more social problems at t1 ( $d=0.63$ ) and t2 ( $d=1.12$ ) No association with prosocial behaviour.

**Table 1** (continued)

Author(s)	$M_{Age}$ (years)	<i>N</i>	Assessment of children's symptoms	Operationalisation and assessment of social competence	Main finding (effect size)
Nantel-Vivier, Pihl, Côté and Tremblay [84]	t1–t4: 2–11 (biennial assessments)	10700	t1–t4: Physical aggression, anxiety and depression via self-developed items Dimensional approach	t1–4: Prosocial behaviour via self-developed items	EXT: trajectory of EXT negatively associated with prosocial behaviour (no effect sizes) INT: trajectory of high and low levels of INT associated with prosocial behaviour (no effect sizes)
Perren and Alsaker [85]	t1: 5.8 t2: 7.4	378	t1, t2: depression via 3 items of the CBCL/TRF Dimensional approach	t1: Prosocial behaviour and social initiative via SOCOMP t1,t2: Peer victimization via 4 items developed by the authors	INT(t1): less social initiative at t1 ( $d = 1.09$ ) and t2 ( $d = 0.47$ ), less prosocial behaviour at t1 ( $d = 0.52$ ) and t2 ( $d = 0.37$ )
Perren et al. [8].	t1: 5.9 t2: 12.0	428	t2: depression via 8-item scale t2: conduct problems via SDQ subscale Dimensional approach	t1: Prosocial behaviour and social initiative via SOCOMP t2: Prosocial behaviour and social initiative via SOCOMP	INT(t2): less social initiative at t2 ( $d = 0.41$ ), no association with prosocial behaviour EXT(t2): less prosocial behaviour at t1 ( $d = 0.32$ ) and t2 ( $d = 0.45$ ), no association with social initiative
Perren, Stadelmann, von Wyl and von Klitzing [86]	t1: 5.2 t2: 6.2	160	t1,t2: INT via SDQ and BPI t1, t2: EXT via SDQ and BPI Dimensional approach	t1,t2: Prosocial behaviour via SDQ and BPI	INT (t1): less prosocial behaviour at t1 ( $d = 0.45$ ), high levels of prosocial behaviour (t1) appeared as a risk factor for INT(t2) ( $d = 0.38$ ) EXT(t1): less prosocial behaviour at t1 ( $d = 0.37$ , $d = 0.90$ ) EXT(t2): less prosocial behaviour at t1 ( $d = 0.72$ , $d = 0.52$ ) and t2 ( $d = 1.09$ , $d = 0.65$ ) No longitudinal effect in regression analysis
Longitudinal, clinical samples Campbell [87]	t1: 3.8 t2: 5.9	112	t1: ADHD via SNAP t1, t2: ADHD and ODD via SNAP (PR, TR) and CBCL; t2: rule compliance, anxiety via CRS <i>N</i> = 69 with EXT symptoms <i>N</i> = 43 controls	t2: Social competence, maturity of behaviour in the classroom and peer group via HRI and CBCL; peer and maternal acceptance via PSPCCA; social skills via CRS	EXT(t1): less social competence at t2 than controls ( $d = 0.57–1.00$ )

Table 1 (continued)

Author(s)	$M_{Age}$ (years)	N	Assessment of children's symptoms	Operationalisation and assessment of social competence	Main finding (effect size)
Hastings, Zahn-Waxler, Robinson, Usher and Bridges [88]	t1: 4.5 t2: 7.0 t3: 9.7	82	t1: EXT via CBCL, TRF and PBQ $N=31$ high risk children $N=28$ moderate risk $N=23$ low risk t2 and t3: EXT via CBCL and TRF	t1: Behavioural observation of children's concern and disregard for others in distress t2: Behavioural observation of children's concern and disregard for others in distress, empathy via BEC; empathy and conscience via MCM; prosocial behaviour via ASB	EXT: high levels of concern and prosocial behaviour at t1 predicted less EXT at t2 (no effect sizes)

Disorders and symptoms: *ADHD* Attention-Deficit Hyperactivity Disorder Symptoms, *ODD* Oppositional Defiant Disorder symptoms; *EXT* Externalizing symptoms, *INT* Internalizing symptoms

Instruments: *ADHD-IV* [89], *AGG* Child's Attributions [76], *AICQ* Adolescent Interpersonal Competence Questionnaire [90], *ASB* Assessment of School Behaviour [91], *BEC* Bryant Empathy Scale [92], *BPI* Berkeley Puppet Interview [93], *CAPA* Child and Adolescent Psychiatric Assessment [94], *CBCL* Child Behaviour Checklist [95], *CBS* Child Behaviour Scale [96], *CCA* McCarthy Scales of Children's Abilities [97], *CPSCS* California Preschool Social Competence Scale, [75], *CRS* Child Rating Scale [98], *CTRS* Conners Teacher Rating Scale-revised [99], *DPICS-R* Dyadic Parent-Child Interactive Coding System-revised [100], *ECBI* Eyberg Child Behaviour Inventory [101], *FI* Friendship Interview [102], *HRI* Health Resources Inventory [103], *MCM* My Child Measure [104], *PAPA* Preschool Age Psychiatric Assessment [105], *PBQ* Preschool Behaviour Questionnaire [106], *PSPCCA* Pictorial Scale of Perceived Competence and Social Acceptance [107], *PCSC* Teacher Rating Scales of the Perceived Competence Scale for Young Children [108], *PKBS* Preschool and Kindergarten Behaviour Scales [109], *POPS* Perception of Peers and Self [110], *PPS-I CARE* Peer Problem-Solving Interaction Communication-Affect Rating System [111], *SCI* Social Competence Inventory [10], *SDQ* Strengths and Difficulties Questionnaire [112], *SIDAC* Structured Interview for the Diagnostic Assessment of Children [113], *SNAP* Swanson, Nolan and Pelham Questionnaire [114], *SOCOMP* Self- and Other-oriented Social Competences [8], *SPA* Self-Perception Profile for Adolescents [115], *SPPC* Self-Perception Profile for Children [116], *SSRS* Social Skills Rating System [117], *TASB* Teacher Assessment of Social Behaviour [91], *TRCB* Teacher's Ratings of Children's Abilities [118], *TRF* Teacher Report Form [95], *VABS* Vineland Adaptive Behaviour Scales [119], *YSR* Youth Self Report [95]

Due to different original sizes, all  $d$  values are given without negative signs



initiative). Regarding children's symptoms, 19 studies measured externalizing symptoms and 9 studies internalizing symptoms. The main results of Table 1 concerning the relation between social competence and externalizing and internalizing symptoms are summarized in Table 2.

Regarding supplementary methodological aspects, 13 studies of the 21 studies used a multi-informant approach to assess children's symptoms and 12 to assess children's social competence; 7 studies used a multi-method approach to assess children's symptoms and 9 studies to assess children's social competence. In 8 studies, children's symptoms were categorised; in 13 studies, symptoms were measured on a continuum.

## Discussion

A large body of research has identified social competence deficits being related to mental disorders such as depression, anxiety, ADHD or conduct disorders in later childhood and adolescence [57–59, 62]. As preschool age (3–6 years) represents a highly sensitive period for both social competence [3, 29] and psychopathological development [48, 51], we conducted a systematic literature review regarding the relation between preschool age children's social competence and psychopathology. Twenty-one studies published prior to September 2016 were included. Besides global measures of social competence, we focused on the two dimensions prosocial behaviour (fulfilling others' needs) and social initiative (fulfilling own needs) [9, 10] and their relation to externalizing and internalizing symptoms. We hypothesized that externalizing symptoms would be associated with deficits in

global measures of social competence and prosocial behaviour as well as with elevated levels of social initiative. We further hypothesized that internalizing symptoms would be associated with deficits in general social competence as well as prosocial behaviour and social initiative.

## Social competence and externalizing symptoms

As hypothesized, we found strong evidence for a negative relation between young children's level of externalizing symptoms and global measures of children's social competence [35, 71, 73, 75, 76]. Looking at the two specific dimensions of social competence, prosocial behaviour and social initiative [9, 10], we found a negative relation between children's level of externalizing symptoms and their level of prosocial behaviour cross-sectionally in community [71] as well as in clinical samples [76], and also longitudinally in both community [79] and clinical samples [88]. Two studies did not find a relation between externalizing symptoms and prosocial behaviour [77, 83], which may be due to the heterogeneous operationalization of prosocial behaviour (SDQ items versus behavioural observation). Only two studies explicitly examined the relationship between social initiative and externalizing symptoms. These two studies give hints that social initiative and externalizing symptoms may not be associated. Thus, one could also argue that aggression, often exhibited along with externalizing symptoms [71], might rather be a problem of low self-control [120] and not necessarily an exaggerated form of standing in for own needs.

In conclusion and in line in line with research on children and adolescents beyond preschool age, we found evidence that in preschool age, deficient social competence, especially

**Table 2** Summary of main results

	Global measures of social competence	Prosocial behaviour	Social initiative
Externalizing symptoms	+ 0 studies	+ 0 studies	+ 0 studies
	– 9 studies ( $d=0.14–2.13$ ) [35, 71, 73, 75, 76, 78, 82, 83, 87]	– 12 studies ( $d=0.32–1.40$ ) [8, 70–74, 76, 79, 81, 84, 86, 88]	– 0 studies
	0 0 studies	0 2 studies [77, 83]	0 2 studies [8, 72]
Internalizing symptoms	+ 0 studies	+ 3 studies ( $d=0.32–0.47$ ) [79, 83, 85]	+ 0 studies
	– 2 studies ( $d=0.09–0.39$ ) [35, 82]	– 4 studies ( $d=0.39–0.91$ ) [79, 84–86]	– 3 studies ( $d=0.33–1.09$ ) [8, 80, 85]
	0 0 studies	0 2 studies [8, 81]	0 0 studies

+ Indicates a positive relation, – indicates a negative relation, 0 indicates no relation

prosocial behaviour, is already associated with both clinical and subclinical levels of externalizing symptoms. Social initiative seems not to be deficiently or excessively expressed. Effect sizes appeared within the range of small to large effects [69] with the majority being either small or medium.

Children with externalizing symptoms were often described as under-inhibited in social interactions [121–123], which may explain the above reported findings. These children tend to approach their peers with such intensity that they are not able to hide their dominant intention (e.g., getting a reward themselves) in favour of comforting others, and they will even display aggressive behaviour to receive a benefit. This might shed light on why deficits of various forms of prosocial behaviour may occur as a correlate of externalizing symptoms.

It is more difficult to attribute a causal role to social competence in the development of externalizing symptoms, though: One study found a longitudinal relation between prosocial behaviour and externalizing symptoms [84]; however, other studies found no relation [83] or only a correlational, non-causal relation [86]. One explanation for these findings might be the heterogeneous operationalization of social competence and also the large variety of informants on children's symptoms and competences in the cited studies. Thus, more targeted future research to identify the way children's social competence affects psychopathological development and vice versa is needed.

### Social competence and internalizing symptoms

As hypothesized, we found a negative relation between global measures of children's social competence and their level of internalizing symptoms within community samples [35, 82]. No clinical studies investigating social competences and internalizing disorders in preschool age could be found. Again looking at the two specific constructs of social competence, prosocial behaviour and social initiative [9, 10], a rather heterogeneous picture emerged in terms of prosocial behaviour. Some studies reported a negative relation between children's level of prosocial behaviour and their level of internalizing symptoms both cross-sectionally and longitudinally [79, 85]. Other studies found a positive relation between children's levels of prosocial behaviour and their levels of internalizing symptoms [84]. In studies by Perren and colleagues [86] and Groeben and colleagues [80], high levels of prosocial behaviour in children with internalizing symptoms even appeared to be a risk factor for future internalizing symptoms. Thus, children with high initial levels of internalizing symptoms seem to suffer from highly prosocial attitudes, as their level of symptoms deteriorates, especially when combined with low levels of social initiative. However, also two studies did not find any relation

between internalizing symptoms and prosocial behaviour [8, 81].

Three studies assessed internalizing symptoms and social initiative in community samples and found that, cross-sectionally, children with problems in the internalizing spectrum also exhibit more social initiative problems [8, 80, 85]. Even though these studies were all longitudinal, not all of them found social initiative deficits to be a causal risk factor for future internalizing symptoms. Consequently, as hypothesized, low levels of social initiative seem to be related to internalizing symptoms during early childhood, but we need more research on the causal role of social initiative for future internalizing symptoms.

In conclusion, the role of prosocial behaviour in the development of internalizing symptoms is less clear than for externalizing symptoms. It seems that both deficient and excessive levels of prosocial behaviour are associated with internalizing symptoms and may also play a causal role in the future development of internalizing symptoms. Effect sizes for the relation between internalizing symptoms and social competence appeared within the range of small to medium [69] with the majority being small effect sizes. Thus, effects appeared to be weaker than for symptoms of the externalizing spectrum, which emphasizes the need for further research on this topic.

The findings concerning a negative association between prosocial behaviour, social initiative and internalizing symptoms are in line with research on social competence deficits in older children with manifest disorders of the internalizing spectrum such as depression or anxiety [15, 16, 59, 60]. New findings concerning elevated levels of prosocial behaviour or extreme worries about close relatives [80, 81, 84] in children with internalizing symptoms may be related to the construct of pathological altruism [124]. In adults, this overly high prosocial tendency, while disregarding one's own needs, has been found in relation to increased symptoms of the internalizing spectrum [125]. Earlier, Hay [126] suggested that excessively high levels of prosocial behaviour could represent a risk factor for childhood psychopathology. Zahn-Waxler and Schoen [127] argue that, for example, children's exposure to depressed parents or marital conflict may lead to a role reversal in the way that young children comfort their parents in these situations. The initial concern may fuse with feelings of anxiety or even guilt about their parents' problems. This dysfunctional pattern of concern and prosocial tendencies could further develop into global attributions of being blameworthy, which sets the stage for further internalizing symptoms.

The above reported findings concerning the relation between internalizing symptoms and social competence may also be explained by the general tendency of children with internalizing symptoms to be behaviourally inhibited and to display withdrawal in social situations [121, 128, 129].

Because of this inherent inhibition, children with internalizing symptoms might find it difficult to approach other people to assert their rights or to fulfil their needs; thus to engage in social initiative. Indeed, our review suggests that children with internalizing symptoms tend to exhibit social initiative deficits. Also in terms of prosocial behaviour, it is important to take into account that different operationalizations imply different degrees of approaching behaviour. A child who intentionally helps another person in need has to show much more initiative than a child who is asked to share resources that he/she already possesses or whose facial concern for other persons' needs is measured. One might argue that children with internalizing symptoms show reduced levels of prosocial behaviour only when they have to overcome their inherent inhibition in social situations. Developmental research has also shown that so-called self-initiated and compliant prosocial behaviour often do not appear to be intercorrelated [130]. Thus, it might be the case that these two forms of prosocial behaviour show different relations to internalizing symptoms, which might explain heterogeneity in the reported findings.

## Summary

In sum, global measures of social competence as well as the two dimensions prosocial behaviour and social initiative show considerable relationships to preschool age psychopathology. Overall, a moderate degree of both prosocial behaviour and social initiative appears to be an optimal adaption of children to their environment as the extremes of each dimension seem to occur in line with psychopathological symptoms [126, 131].

Some of the above reported studies also suggest a causal role of social competence in the development of future internalizing or externalizing symptoms [35, 81, 86]. Other studies suggest that also symptoms may influence social competence [78, 83]. Bornstein and colleagues [35] elucidate these two possible main directions of effects of social competence and psychopathology in detail and review previous research on both directions. They found most profound evidence for the direction that social competence principally influences psychopathology and replicated this finding in their study. This direction of effect is also in line with developmental task theory [132].

## Methodological considerations

Regarding methodological aspects, only a few studies in our literature review followed a multi-informant and multi-method approach. Assessing children's symptoms as well as social competence by a single informant and/or with a single measure only can undermine the validity of data due to shared method variance or single informant biases. In these

cases, a large proportion of variance may be attributable to the measurement method or perspective of one person and not to the construct of interest [133]. Additionally, in childhood research, data taken from different perspectives (child versus adults) and in different contexts (school versus home) often differ considerably [134]. Perren and colleagues [135] demonstrated one empirical manifestation of that problem: Children who reported greater difficulties than in reports of their parents and teachers also mentioned more often being victimized by peers. Furthermore, children who reported fewer problems in terms of hyperactivity/impulsivity compared to their parents and teachers were more often disliked by their peers than children whose self-ratings were consistent with the ratings of adults. Kraemer and colleagues [134] suggest that differences between informants and contexts should not be considered a problem but as providing important additional information on children's mental health. Thus, to draw a more differentiated picture of childhood psychopathology, we highly recommend an integration of multiple informants and methods in future research.

Many studies in our selection [72, 79, 80] solely used questionnaire data from teachers or parents to assess children's social competence. Thereby, some distortion as a result of memory biases or social desirability is likely to appear. For future studies, we recommend integrating more behavioural measures of social competence as is common in developmental research. The full range of experimental behavioural methods in that field has demonstrated that prosocial tendencies occur very early in life [3], so these methods could be adapted for future clinical research on preschoolers' social competence. Since interviews or questionnaires are often hard to conduct with children in preschool age, behavioural methods could help to assess the child's perspective regarding situations requiring socially competent action.

Behavioural observations may also help to assess proximate measures of social competence. Many studies of school age or preschool age children have used quite distal measures such as the quality of peer relations or peer acceptance [32, 35] which may be considered as social adaptation, a result of social competence [34]. As the differential impact of social competence on internalizing and externalizing symptoms requires further research and more precise measures, data from experimental behavioural observation may fulfil this requirement as situations with concrete social competence demands can be created.

Another methodological issue relates to the diagnostics of children's symptoms. Even though it appears quite difficult to clinically diagnose preschool age children [136], clinical studies in preschool age exist. However, the majority of the reported studies did not claim to be a pure clinical study and largely described their sample as subclinical. In discovering the roots of childhood psychopathology, a dimensional

assessment of symptoms generally seems more appropriate, since subclinical levels of symptoms also cause suffering [70], are likely to develop into a chronic manifestation [51] and may already be accompanied by social competence deficits [86]. Hence, a categorical comparison of a high risk and a low risk group may cause a loss of relevant data, disregarding the rest of the spectrum. Therefore, we also recommend studying the relation between competence deficits and early psychopathological symptoms on a dimensional level in future research.

### Limitation of the current review

The following limitations for the results of the current review, which arise from the study inclusion criteria, must be taken into account. First, previous research has shown that both social competences and psychopathology are moderated by individual and contextual factors such as gender [137], parenting styles [138], mental health of parents [139], and socio-economic status [140]. However, due to the rather limited number of studies that qualified for the review, a systematic consideration of these additional factors was not yet possible. Hence, more studies are needed taking these moderating factors into account when assessing social competences and psychopathology in early childhood. Second, while the current review focused on a theoretically based and empirically validated definition of social competence [6, 10] which applies to children as young as 3 years of age and beyond, it must be acknowledged that other early forms of social interactions such as social attention [17] or parent–child attachment [22] also influence both children’s social competence development and psychopathology.

There are also important limitations arising from the methods and study designs by the selected studies. First, the studies were mainly conducted in western countries where individualistic values are predominant in society. Studies in other countries, for example, with predominantly collectivistic values, may draw another picture of the relation between social competence and psychopathology [16]. Thus, future research should also address these cultural underpinnings. Second, researchers often find substantial comorbidity rates among internalizing and externalizing symptoms [141]. Thus, the question if and how social competence problems occur in children with both kinds of problems needs to be addressed as well. Comorbidity, however, was often not analysed in the above reported studies [75, 78, 88]. Therefore, we were unable to conduct further comorbidity analyses. Third, the studies’ scales for assessing social competence and psychopathological symptoms appear heterogeneous. Thus, it is quite difficult to draw coherent conclusions. Still, our definition criteria for prosocial behaviour and social initiative helped comparing these rather heterogeneous studies. Although we are confident that our database search and hand

search identified most of the published studies to date, we did not systematically search for unpublished studies (“gray literature”). On the one hand, this posits a danger to our results, as significant results could be overrepresented in the literature review (“publication bias” or “file drawer problem”). Statistically significant results are more likely to be published, while studies with non-significant results often remain unpublished in researchers’ file drawers [142]. On the other hand, inclusion of unpublished studies, which did not undergo or pass peer review, could reduce the quality of the literature review. Still, it needs to be considered that more non-significant results could still be hidden.

In addition, moderating and mediating factors should be considered when interpreting social competence as a risk factor for psychological disorders. One important construct seems to be children’s emotional competence. Emotional competence includes such factors as emotional knowledge, recognition and understanding of one’s own and others’ emotions, regulating emotions and emotional expression [143]. Recent studies have found that children’s degree of social competence is highly influenced by their degree of emotional competence [23, 47, 144]. In their tripartite model of social competence, Perren and Malti [8, 34] conceive of emotional competence as a mental process or intrapsychic construct of social competence. Thus, further research on early social competence deficits in children with internalizing or externalizing symptoms should also consider potential deficits in emotional competence.

### Conclusion and future research

Overall, we demonstrated that social competence already plays an important role in the earliest manifestations of psychopathological symptoms in children of preschool age and may thus be regarded as one important risk or buffer factor in ontogeny. While externalizing symptoms are accompanied by deficits in global social competence measures and prosocial behaviour, no relation to social initiative was found. Internalizing symptoms may be accompanied by either deficient or excessive levels of prosocial behaviour. In addition, social initiative seems to be impaired in children with internalizing symptoms. Given these differential effects, interventions to promote social competences should be designed differentially depending on whether the child mainly exhibits internalizing or externalizing symptoms.

However, current knowledge on preschoolers is still too sparse, as studies on this population are scarce. Additionally, within this limited body of research, information is often derived from single informants only or assessed by single or rather distal measures. Thus, a more comprehensive approach to this highly relevant topic is needed, and future studies should apply a multi-informant and multi-method approach as well as a dimensional classification of children’s



symptoms. There is also a need to make use of an empirically testable operationalization of social competence and to consider moderating or mediating factors. As a result, a more detailed understanding of correlates and causal risk factors in childhood psychopathology will be achieved and more appropriate intervention and prevention manuals may be developed.

## Compliance with ethical standards

**Conflict of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest. This research project was funded by a stipend of the Friedrich-Ebert-Foundation, granted to the first author.

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