Children's Behavioral Agency within Families in the Context of Migration: A Systematic Review

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Abstract
Migration may lead to changing power dynamics between parents and children in families. Children may change their behavior in order to exercise agency to respond to migration of family members or themselves. This systematic review seeks to understand how children exercise agency within families in the context of migration. The authors searched ten databases to collect English-written articles published in academic journals in or after 2010. The studies were coded to generate a quality indicator. 65 Articles with moderate and strong quality were included in this review, including 41 qualitative studies, 16 quantitative studies, and 8 mixed-methods studies. Children and adolescents with demographically and culturally diverse backgrounds were analyzed in these studies. The systematic review shows that children have different levels of behavioral agency in the migration decision-making process; they also exercise agency in different aspects of family life. For example, left-behind children exercise agency in care provision and information nondisclosure, and migrant children in media and language brokering. Children's behavioral agency is place-specific. Adults working with children need to pay more attention to children’s behavioral agency in order to support children’s healthy development and facilitate their adaptation in the context of migration.

Keywords Systematic review · Children's agency · Family · Household · Migration

Introduction
Children1 are aware of their experiences as social actors. Therefore, exercising agency is important to their well-being (Fattore, Mason, & Watson, 2009). This is consistent with the belief that children should not just be treated as subjects of parents’ decisions, and research should give children a voice when analyzing family decisions (Hardman, 2001). Some researchers have focused on the child’s perspectives to better understand their experience and feelings around decision-making (Kämpfe & Westphal, 2016). Migration affects children’s life significantly and is an example of an important family decision for large numbers of families. There is a growing body of research examining children’s experiences and whether they can demonstrate agency as families decide to migrate. These studies are based in different locational, social or cultural contexts and use different methodologies. Not having a systematic review to map out the field and summarize the existing research findings makes it difficult for researchers to confidently pinpoint new research directions. This study aims to fill in this gap by conducting a systematic review on children’s behavioral agency within their families in the context of migration.

The Concept of Children’s Agency and Existing Systematic Reviews
Agents are defined as “individuals as actors with the ability to make sense of the environment, initiate change, and make choices” (Kuczynski, 2003, p. 9). The concept of agency contains three aspects in social science literature: (1) autonomy, which is the motivational aspect of agency, including self-determination and self-preservation; (2)

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1 Children in this review means human offspring not yet reached adulthood which includes young children and adolescents (<18 years old).
construction, which is the cognitive dimension of agency, which refers to the capacity to make sense of experiences and create new meanings; and (3) action, which is the behavioral aspect of agency (Kuczynski, 2003). Children’s agency can be exercised in different ways, and agentic acts may involve resistance to, complicity with, accommodation to, or reinforcement of status quo (Ahern, 1999). For example, a single child in a multi-generational family could exercise agency “in sometimes subtle and creative ways, in overt resistance that exploited weaknesses in each of their different relationships, in behavioral compliance accompanied by private rejection of parental messages, in creative attempts at evasion and delay, and in strategically using relationships with some adults to offset the influence of others” (Goh & Kuczynski, 2009, p. 525). “Sense of agency” refers to “feeling like an agent.” “Exercise of agency” refers to “being an agent” or agentic behavior. Sense of agency and exercise of agency may not be consistent with each other (Cummins & Schermerhorn, 2003). The sense of agency is subjective and may not translate into actions, e.g. children making decisions themselves or making parents take children’s needs into account. Although the concept of agency contains different aspects, this systematic review focuses on “the behavioral aspect of agency”, i.e. exercising agency or performing agentic behavior. The review examines how children exercise agency in relation to the family’s decision-making in the process of family migration. Children’s actions may be the outcomes of the power dynamics in their households and can further influence family power relations (Kuczynski, 2003).

The existing literature has reviewed children’s agency in different contexts. One progress report discussed children’s resistance and resourcefulness in the face of threats to their security, respect, and livelihoods (Jeffrey, 2011). This provides a reference to understand the agency of children in the context of migration. Another review of key quantitative and qualitative research finds that children actively support their mothers and encourage them to make good decisions when facing domestic violence (Katz, 2015). However, that review is not related to migration. One Chinese article has also reviewed children’s agency in different studies and discussed the relationship between agency, structure, and culture (Xiao & Yuan, 2019). These three reviews focused on children’s agency but did not report that they used systematic methods to search and screen articles and did not focus on children’s agency in the context of migration. Children can exercise their agency in different domains, such as households, peer relationships, schools, communities, service organizations, and political activities and movements. Children’s families greatly influence their development and well-being, and power dynamics within households may change during and after migration. Therefore, this study focuses on children’s agency within their households.

The content of children’s agency can vary as children use different concepts of self-responsibility, e.g. some children associated agency with adaptation, conformity, and self-optimization, and had strong self-efficacy beliefs, while others associated children’s agency with their own preferences, such as fun and enjoyment, or freedom from taking responsibility for their own actions (Kämpfe & Westphal, 2016). Children’s agency also shows cultural differences. In cultures stressing interdependence, individuals may be more collectively agentic, while in cultures stressing independence, individuals may be more personally agentic (Hernandez & Iyengar, 2001).

The impacts of children exercising agency are not always positive. Sometimes their actions may go against socially approved goals and social norms (Bordonaro, 2012; Sutterlüty & Tisdall, 2019), such as children’s agency in domestic labor in Haiti, and such agency may be considered to be unwelcome due to the victim image of child labor (Hoffman, 2010). Children’s agency may be also against their own interests. For example, they might be happy just playing computer games frequently, but this may negatively influence their health and well-being. In summary, children’s agency is not homogeneous, and differs according to individual preference, specific circumstances and cultural variations, and agency may affect the children positively or negatively.

**Children’s Agency in the Context of Migration**

Children can migrate independently or with their parents or stay behind in their hometown when their parents migrate. Data shows 14.6% of the international migrant stock in the world in 2020 were young migrants aged 19 years and under (UNDESA, 2020), and a large number of children were also involved in domestic migration. Parents and children living in different contexts: parents and children living in new environments in the destination of migration, children living alone in the migration destination, or children living in their hometowns without their parents. These changes in circumstances would affect the way parents and children interact. This review covers children in these different circumstances. The behavioral agency to be studied includes those behaviors related to decisions relevant to their daily lives when living in families living with migration and/or exercising agency when parents live separately (Asis, 2006; Huijsmans, 2011; Orellana et al., 2001). Children, whether involved in migration or not, have a process of agency development; however, migration and the associated issues may complicate this process. Previous studies have identified certain activities as exercising agency in the context of migration, however more studies need to be screened systematically to have a comprehensive understanding of children’s various activities to exercise agency.
Current Study

This systematic review examines the existing research on children’s agency in the context of migration, including both domestic and international migration. The main question is: How do children exercise agency in the family setting in the context of migration? The sub-questions include: (1) How do children exercise agency in the family with regard to decisions in the process of migration? (2) How do children exercise agency in their daily life during/after migration? (3) How do researchers measure children’s agency in family in the context of migration? As there is not a mature scale or questionnaire to measure children’s strategies of exercising agency in the context of migration, the third sub-question is included to help develop a scale or questionnaire for future studies. Additionally, the influence of migration on child agency is summarized to show the context of migration though it is not a direct sub-question.

Methods

This systematic review follows the guidelines of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA; Liberati et al., 2009) and the guidelines of Enhancing Transparency in Reporting the Synthesis of Qualitative Research Statement (ENTREQ; Tong et al., 2012). The details of the process are provided in the following sections and Supplementary Information 1.

Search Strategy

English full-text studies published in academic journals in or after 2010 are included in this research. The search was conducted in databases including Web of Science, Scopus, PsycINFO (via Ovid), PubMed, Family and Society Studies Worldwide (FSSW, via EBSCO), and the databases sit within the ProQuest platform [including Education Resources Information Center (ERIC), Education Database, Psychology Database, Social Science Database, and Sociology Database]. Search strategies were refined for each database, and the details of the databases and search fields are provided in Supplementary Information 2. The following restrictions were applied equally in these databases: (1) The publication years were limited to “in or after 2010”. (2) The publication language was limited to English. (3) Only articles published in academic journals were included. Books, book chapters, theses or dissertations, reports, working papers, conference papers and proceedings, and other grey literature were excluded.

The search terms are a combination of keywords related to “children”, “migration”, “agency” and “family”. The search terms were:

(1) child* OR kid* OR adolescent* OR youth* OR teen* OR student* OR minor OR junior
(2) migrant* OR migrat* OR immigrant* OR immigrat* OR floating OR left-behind
(3) agency OR decision-making OR self-determination OR autonomy OR voice
(4) family OR household OR domestic OR home OR parent* OR father* OR mother* OR paternal OR maternal OR caregiver* OR carer*

The main search was conducted in April 2020. Articles were first screened by title and abstract, and then closer examinations were conducted after the screening. The original number of search records was 2935. Of these, 42 were excluded because they were published in books or book sections rather than academic journals. After removing the duplicates, 1580 records were included in the title and abstract screening, and 1485 records were excluded with reasons. In the title and abstract screening, when the first researcher was not sure whether the articles should be included, the research team discussed the articles to achieve consensus. This resulted in 95 articles being included for the full-text screening. Of these, 39 articles were excluded with reasons, and 56 articles were considered to be included in the quality assessment. In the full-text screening, after the first researcher completed the full-text screening, the second researcher checked the included and excluded articles. Consensus on the included and excluded articles was achieved. The 56 identified articles were assessed for eligibility in the full article.

A backward tracking strategy was conducted to identify additional relevant articles. The reference lists of the 56 identified articles were examined for additional articles published in or after 2010. Another nine relevant articles were included by checking the title and abstract of studies in the reference lists. In summary, 65 articles were included to do the quality assessment. A flow chart of the systematic literature search and screening is developed according to PRISMA guidelines (Liberati et al., 2009) (see Fig. 1).

Inclusion and Exclusion Criteria

The detailed inclusion and exclusion criteria are:

(1) Participants are children who are younger than 18 years old. The children include those influenced by migration, such as migrant children, immigrant children, left-behind children, children of immigrants, and second-generation immigrants. Studies of child marriage, early
marriage(s), teenage pregnancies, and teenage mothers and related topics, including their pregnancy, giving birth, childbearing, contraception knowledge, and attitudes, were excluded, though they belonged to the children’s age group. Studies focusing on the migration of young football players, which is closely related to the context of the football industry, were excluded. Studies only focusing on university students, college students, emerging adults, and young adults were excluded considering that most of them were older than 18 years old. Studies that included young people both younger and/or older than 18 were included.

(2) The articles should be focused on the behavioral aspect of agency. Studies only examining children’s perceptions of agency or sense of agency which did not involve exercising agency were not included.

(3) Empirical research articles, using either quantitative, qualitative or mixed methods were included. Comments, literature reviews, systematic reviews, meta-analyses, and theory papers were excluded.

(4) The article examined children’s agency in the family setting. Children exercising agency outside the family, such as agency in classrooms, schools, hospitals, organizations, and the community, were excluded.

(5) The included studies had to be focused on migrant families, including domestic migration and international migration. Forced migration such as refugees and asylum seekers were not included in this research as the
migrants/immigrants, refugees, and asylum seekers were included, and the review focuses on the findings of ordinary migrants.

In addition, studies that included insufficient data for analysis were excluded. Articles that did not have a full-text version were excluded. However, no studies met these exclusion criteria in the current review. Studies published in non-academic journals or unpublished studies (e.g., Ph.D. or master's Dissertations) were excluded.

Data Extraction

Data extracted with the selected studies included the author(s), year, country, publication journal, type of study, characteristics of participants (including the type of migration), methods, measures of agency (what is considered as exercising of agency in qualitative studies), and findings of agency. The extracted information is shown in Table 4 in the “Appendix”. Measures and findings of agency are summarized in the “Results” section. Two researchers were involved in the coding of each article included. The first researcher extracted the data, and the second researcher checked the extracted data.

Quality Assessment

Two researchers independently assessed the quality of all identified articles based on quality checklists (the “Qual-Syst” tool), developed by Kmet, Cook and Lee (2004). This tool consists of two checklists: one is designed for quantitative studies, and the other for qualitative studies. The selected quantitative and qualitative studies were assessed based on the two checklists respectively, while the mixed-methods studies were assessed based on a combination of the two checklists. The two checklists have clear scoring systems and were used in the previous systematic review of qualitative, quantitative, and mix-methods studies (Reardon et al., 2017). The modified items of the two checklists are provided in Supplementary Information 4.

Articles were rated on the items in both checklists using a three-point scale (2 = Yes, 1 = Partial, and 0 = No). The quality score is the percentage of total score among the possible maximum score. Based on the calculated quality scores, the articles were categorized as strong quality (≥ .75), moderate quality (between .55 and .75), and weak quality (≤ .55) (Landais et al., 2020). When there was disagreement on the quality category, the consensus was reached through discussion. Cohen’s κ coefficient evaluated the interrater reliability. The interrater reliability between the two researchers was achieved with a high level of agreement (κ = .845). The inclusion or exclusion of the assessed articles was determined by the mean scores of the two independent researchers. Based on the rating, articles with moderate to strong quality were included. All the articles have strong or moderate quality, and thus no article was excluded.

Data Analysis

Framework synthesis (Gale et al., 2013) was conducted with the included studies. The stages include: familiarization with the included studies, developing a working analytical framework, applying the analytical framework, charting data into the framework, mapping, and interpreting (Gale et al., 2013; Lee, Lo, & Ho, 2018). The analytical framework was developed based on the review questions and the stages of migration, including children’s agency in the migration decision-making process, children’s agency in daily life during/after migration in different types of migration, and how migration shapes household dynamics. Practically, first, the keywords and sentences in each article were identified, then the common patterns and themes across different articles were identified, and finally, these key findings were compared and synthesized. The analyzing procedures are similar to those in qualitative studies (Li, 2010).

Results

Characteristics of the Included Articles

In total, 65 articles published between 2010 and 2020 were included in the systematic review (see Table 4 in the “Appendix”). Out of the 65 selected articles, 41 are qualitative studies, 16 are quantitative studies, and 8 are mixed-methods studies (see Table 1). In the current review, studies that used only qualitative data in a mixed-methods project were counted as qualitative studies (e.g., Hoang & Yeoh, 2015). Studies using a quantitative approach to analyze qualitative data were treated as qualitative studies (e.g., Bakken & Brown, 2010). One quantitative article study only used qualitative quotations in the discussion section and thus was considered a quantitative study rather than a mixed-methods study (e.g., Jensen & Dost-Gözkhan, 2015). In total, the 65 included studies reported five types of children’s involvement in migration: (1) being left behind (9 studies), (2) (im-)migrating with parents (43 studies), (3) migrating independently (6 studies), (4) family reunification (parents migrate first, and then children migrate to join the family, that is children have both experiences of being left behind and migrating, 4 studies),2 and (5) return migration.

2 Articles that mentioned family reunification but did not focus on it were not labelled as such.
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(Children who return to their parents’ birthplace with parents or without parents, 3 studies). The largest proportion of studies were conducted in the U.S. (24 studies). The samples in the 65 studies include preschool children, primary school-aged children, adolescents, and young adults, while most of them were aged 5–18. These articles have mainly examined children’s agency in the migration decision-making process and children’s agency in daily life during/after migration. In the following sections of the analyses, the descriptive statistics of each article, such as the number of cases studied was not discussed individually, and it is shown in Table 4 in the “Appendix”.

Quality Assessment of the Included Articles

The detailed quality assessment is provided in Tables 5, 6, and 7 in the “Appendix”. Specifically, 17 studies have moderate quality, and 48 studies have strong quality. Considering the types of studies, 6 mixed-methods studies (75%) have moderate quality while only 2 (25%) have strong quality, 11 qualitative studies (27%) have moderate quality and 30 qualitative studies (73%) have strong quality, and all of the 16 quantitative studies (100%) have strong quality.

Children’s Agency in Migration Decision-Making

Decisions related to migration include: “parents migrating and children staying behind”, “parents migrating together with children”, “children migrating independently”, “family reunification”, and “parents’ or children’s returning and re-emigration”. The levels of children’s agency are reflected by the level of children’s participation in making migration decisions. Children who can make decisions independently have a high level of agency, while children who do not get involved in migration decisions have a low level of agency. Some children can have certain influence on the decisions related to migration, between low-level and high-level agency. In the 65 articles, all three levels of agency could be observed. These three levels of exercising agency in the migration decision-making process are summarized and compared in Table 2. It should be noted that one article may report children’s varied levels of agency in migration decision-making.

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**Table 1** Characteristics of the included articles

| Children’s migration status                  | Type of study | Total |
|---------------------------------------------|---------------|-------|
| (Im)migrant children with parents           | Mix method    | Qualitative | Quantitative | |
| Left-behind children                        | 1             | 27     | 15           | 43            |
| Independent child (im-)migrants             | 4             | 5      | 0            | 9             |
| Family reunification                        | 2             | 3      | 1            | 6             |
| Return (im-)migrant children                | 0             | 4      | 0            | 4             |
| Total                                       | 8             | 41     | 16           | 65            |

**Table 2** Children’s levels of agency in the migration decision-making process

| Levels of agency | Types and locations of children |
|------------------|---------------------------------|
| High-level agency (make own decisions) | Independent child migrants in Ghana (Amoah, 2020; Kwankye, 2012; Mizen & Ofosu-Kusi, 2013) |
|                  | Unaccompanied children in Sweden (Lalander & Herz, 2018) |
|                  | Unaccompanied minors from Zimbabwe to South Africa (Adefehinti & Arts, 2019) |
|                  | Some returned migrant children to Mexico (Zúñiga & Hamann, 2020) |
| Middle-level of agency | Returned migrant children from U.S. to Mexico (González et al., 2016) |
|                  | Some immigrant children from English-speaking backgrounds in Australia (Hutchins, 2011) |
|                  | Becoming a young migrant or a young stayer in Lao (Hujsmans, 2014) |
| Low-level of agency or agency within a restricted framework of choices | Children in intra-EU migrant worker families (Moskal & Tyrrell, 2016) |
|                  | Children migrating from China to Singapore with study mothers (Huang & Yeoh, 2011) |
|                  | Young Turkish migrants in U.K. (Tanyas, 2012) |
|                  | Left-behind children in Vietnam (Hoang & Yeoh, 2015) and Romania (Pantea, 2011) |
|                  | Returned migrant children to Mexico (Zúñiga & Hamann, 2020) |
|                  | Some immigrant children from English-speaking backgrounds in Australia (Hutchins, 2011) |
|                  | Overseas born youth returned to Tonga (Lee, 2016) |
|                  | Some independent child migrants (Kwankye, 2012) |

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3 Some of the studies include young people older than 18.
First, some articles described circumstances in which children had high levels of agency in their migration decision-making process, especially among independent child migrants. For example, some children made individual choices to leave their households and become independent migrants in Ghana, which was related to their need to express their agency (Amoah, 2020; Mizen & Ofosu-Kusi, 2013). However, significant gender differences exist among independent child migrants. Among the 451 independent child migrants in Ghana, two-thirds of the 293 female migrants stated that they made their own decisions to migrate, while more than half of the 158 male migrants stated that their migration decisions were made by persons other than themselves (Kwankye, 2012). Some unaccompanied children in Sweden (Lalander & Herz, 2018) and unaccompanied minors from Zimbabwe to South Africa (Adefehinti & Arts, 2019) also decided to migrate independently. Although most children were not involved in the decision to return to Mexico, some saw themselves agentively as actors to choose where they wanted to live and with whom they would live (Zúñiga & Hamann, 2020).

Second, children had a moderate level of agency and could influence parents’ migration decision-making in certain ways or at different stages of migration or remigration. For returned migrant children from the U.S. to Mexico, children played critical and varied roles in the family decisions on return migration and re-emigration. For example, parents consulted with the children in their decision to return or re-emigrate, and there were cases of children influencing parents on where to move, school choice, whether to return or re-emigrate (González, Cantú, & Hernández-León, 2016). The process of family return migration provided an opportunity for children to renegotiate the parent–child relationships and exert their influence on decisions that directly affect their lives (González et al., 2016). For immigrant families from English-speaking backgrounds in Australia, in the majority of families, children actively attempted to influence adults, and some of them successfully influenced their parents on the migration decision, while the opinions of other children were overridden by the adults (Hutchins, 2011). In addition, one study conducted in Lao states that young people’s agency was not limited to migration and may also be exercised through becoming or remaining a young stayer, and it was shaped by the intergenerational contract between parents and children (Huijsmans, 2014).

Third, children exercised little agency in the migration decision-making process, especially migrant children, left-behind children, returned migrant children, and some independent child migrants. For example, in intra-EU migrant worker families, some children were encouraged to engage in family migration decision-making, but it was usually within a restricted framework of choices outlined by parents (Moskal & Tyrrell, 2016). Children migrating from China to Singapore with study mothers (Huang & Yeoh, 2011) and young Turkish migrants in the U.K. reported their lack of active involvement in the family’s decision-making processes (Tanyas, 2012). For left-behind children in Vietnam (Hoang & Yeoh, 2015) and those in Romania (Pantea, 2011), their voices were largely not heard in the migration decision-making process and agreed that parents tended to underestimate their level of competence. The migration decisions of some independent child migrants were made by persons other than themselves (Kwankye, 2012). Overseas born youth returned to Tonga under pressure from their families, and they had been forced or their parents had decided to return (Lee, 2016). Although children in these studies had a low level of agency in making migration decisions, parents from different cultural backgrounds tended to say the decisions to migrate or return to homeland were made in the best interests of the children, to protect them or otherwise attend to their well-being, such as the parents of left-behind children in Romania (Pantea, 2011), parents of returned migrant children in Mexico (Zúñiga & Hamann, 2020), and parents of some immigrant children in Australia (Hutchins, 2011).

Children’s Agency in Daily Life After Migration

Children exercise their agency in everyday life within the family. Children’s agency was expressed and exercised through various aspects in daily life, such as their socializing times, friendship groups, and negotiations and conflicts with parents (Clayton, 2013). Furthermore, children’s agency is expressed in different ways and different aspects when facing different types of migration (see Table 3). There are many decisions and activities that children and parents need to consider in daily life during and after migration. Among the included studies, the decisions and activities related to children’s agency in daily life after migration include a wide range of different activities.

Migrant/Immigrant Families

Migrant/immigrant children’s agency is expressed in various ways. First, information disclosure and secretive behavior reflect immigrant children’s autonomy (Bakken & Brown, 2010). Adolescents controlled what to disclose to parents, and they had the autonomy to decide when they disclosed information and the type of information they wanted to disclose (Fernandez, Loukas, & Pasch, 2018), and non-disclosure was used as an adaptive strategy to pursue autonomy in harmony with parental regulation (Yau, 2016). Canadian-Arabic immigrant adolescents also controlled what was told and presented to their parents when sharing information with parents (Ashbourne & Baobaid, 2014). Similarly, Russian-speaking youth in Canada chose to hide their new identity.
| Types of migration | Aspects of expressing and exercising agency | Strategies of exercising agency | Supporting quotations |
|-------------------|-------------------------------------------|----------------------------------|-----------------------|
| Migrant/immigrant families | Information disclosure and secretive behavior (Ashbourne & Baobaid, 2014; Bakken & Brown, 2010; Fernandez et al., 2018; Glozman & Chuang, 2019; Yau, 2016) | (1) Control when they disclose information, the type of information to disclose, and how the information is presented | “Anything that is my business is their business, too. But there are certain things that I still don’t want them to know” (Yau, 2016, p. 617) |
|                    | Family members’ media use and media brokering, language learning, and adaption in the destination (Clark & Sywyj, 2012; Clayton, 2013; He, 2016; Huang & Yeoh, 2011; Katz, 2010; Stuart et al., 2010; Tanyas, 2012) | (2) Adapt quickly and help the families through media and language brokering | “There were times when I raised my voice. There were times that I fought against many things. (.) But if you look (.) I see my mother being beaten down in those cases. My mother stays between us. (.) I cannot bear that. Therefore I say ‘okay, nothing is too bad. Yeah, I have fun in quite a good way, too’” (Tanyas, 2012, p. 702) |
|                    | Culture mediating, information sharing, creating social capital within families, developing new networks (Sime & Fox, 2015a, 2015b; Sime & Pietka-Nykaza, 2015) | (3) Create social capital within families and developing new networks through culture mediating and information sharing | “My Biology teacher always tells me about things we can do. She told me they had English classes for adults at the college and I told my mum and she went there for a few weeks. (Gintare, Lithuanian, age 16)” (Sime & Fox, 2015a, p. 530) |
|                    | Agency in sexual discourses and strategies, romantic relationships, peer relationships and activities (Akinsulure-Smith et al., 2016; Cense, 2014; Clayton, 2013; Peltola et al., 2017; Romo et al., 2014) | (4) Use different strategies to exercise their sexual agency and manage parents’ concerns about friendships | “My mother is the number one person. My parents gave me life and a future. I would not be able to hurt my parents or to damage their reputation. That would be too painful for me” (Cense, 2014, p. 844) |
|                    | Contributing to family well-being and advancement (Clayton, 2013; Estrada, 2013; Estrada & Hondagneu-Sotelo, 2011; Turjanmaa et al., 2017) | (5) Help family business, be a role model for younger siblings, and do housework | “Well, it’s less work for them, cause if I weren’t there, then my mom would have to be serving, and she would have to be charging, and she would have to be washing her hands sooo many times because she grabs the money…They [my parents] need me to help. If it is not me, then it’s no one.” (Gloria, fourteen)” (Estrada & Hondagneu-Sotelo, 2011, p. 112) |
|                    | Dealing with family bonds and family hierarchy (Edinburgh et al., 2013; Li, 2010; Moskal & Tyrrell, 2016; Wang et al., 2015) | (6) Use different strategies to deal with family bonds, family hierarchy, and family expectations | “I don’t want to stay home because they are always looking at my bad side, never at the good side. They don’t look at the good things that I do. Even if I cook, clean, or anything like that, they think that I’m lazy” (Edinburgh et al., 2013, p. 7) |
|                    | Making decisions about healthy eating, lifestyles and physical activity participation (Kilanowski, 2016; Pang et al., 2015) | (7) Choose foods, lifestyles, and whether to participate in physical activity | “Ada: I would spend most of the time in my house. I sit in front of the computer, ha ha. I just do my homework, go on to the Internet, I sometimes go and watch TV. Sometimes when I go outside, I ride my bike but my parents don’t want me to ride outside, coz there’s more cars in the place where I lived before, the place I lived before was like a circuit. (Interview 6, February 2011)” (Pang et al., 2015, p. 1056) |
Table 3 (continued)

| Types of migration          | Aspects of expressing and exercising agency                                                                 | Strategies of exercising agency                                                                 | Supporting quotations                                                                                                                                                                                                 |
|-----------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Left-behind children        | Providing care and responding to care arrangement (Duque-Páramo, 2012; Graham et al., 2012; Hoang et al., 2015; Lam & Yeoh, 2019a; Pantea, 2012) | (1) Perform domestic chores, provide care for siblings, receive and manage gifts and remittances, deal with care management, and influence parents' migration decisions and behaviors | “When Mommy left I lived temporarily with my aunt, the sister of my father because I was the only girl [here]. After 6 months, I came home. Because my father and brothers were here. [Living with my aunt and returning home was all] my decision” (Lam & Yeoh, 2019a, p. 3098) |
|                             | Coping with left-behind life (Lam & Yeoh, 2019b; Nazridod et al., 2019)                                        | (2) Manage changes in daily life and manage their well-being                                      | “Usually, I like to keep my thoughts and feelings inside me. My neighbor who is also my friend is the person with whom I share my feelings sometimes. But I like to keep them to myself and listening to music always helps me to calm down. […] When my mother came for a visit, I was happy and it was an unusual feeling. I was not worried about anything. […] It [her parents’ migration] is hard, but I was able to sign up for extra courses like English language and Mathematics. They are important to know for the future” (Nazridod et al., 2019, p. 12) |
|                             | Using modern communication technologies (Graham et al., 2012)                                                   | (3) Have access to modern communication technologies with adults as gatekeepers              | “Whenever Daddy wants to chat with us, he calls Mummy and tells her to turn on the computer so we can start chatting with each other …once or twice a [week]. Previously, he communicated with us through the telephone. That was when we had no computer yet … but we don’t use text messaging much. … When I’m in ‘I’m mobile’ mode (Yahoo Messenger), Daddy sends me a message telling me to study well” (Glady, girl, 11 years old, the Philippines, mother carer, father seafarer) (Graham et al., 2012, p. 807) |
|                             | Obtaining or disclosing information (Pantea, 2011)                                                            | (4) Choose whether to obtain or disclose information                                            | “Mom was always severe and authoritarian. She lost in her relation with me, as she didn’t discuss things when I was little…and since she talked my head off with my former boy- friend, I’m not going to tell her a thing! So if she wants to find out something about me, she won’t find it from me! She can do anything, I’m not gonna tell her. (Irina, 15 years old)” (Pantea, 2011, p. 384) |
| Types of migration         | Aspects of expressing and exercising agency                                                                 | Strategies of exercising agency                                                                 | Supporting quotations                                                                                                                                                                                                 |
|---------------------------|----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Independent child migration| Contributing to family well-being (Amoah, 2020; Kwankye, 2012) Coping with migration life (Adefehinti & Arts, 2019) | (1) Self-sacrifice for both personal and familial well-being  
(2) Using different coping strategies to fend for themselves | “They [parents] don’t have the money so what do you expect them to do? I know that if they have the money, they will pay for school fees and buy me everything I need (Asana, female, 14 years)” (Amoah, 2020, p. 469)  
“I prefer to work now than go to school because schooling may bring a better future, but I need to survive now. And I am working hard so I can send some money to my mother – Tapiwa (out-of-shelter boy, 17 years)” (Adefehinti & Arts, 2019, p. 435) |
| Family reunification      | Negotiating intergenerational relations (Caneva, 2015; Giuliani et al., 2017)  
Negotiating the traditional division of gender roles (Giuliani et al., 2017; Lagomarsino & Castellani, 2016)  
Utilizing the family and kinship resources to overcome challenges (Saint-Blancat & Zaltron, 2013) | (1) Define, negotiate, and construct intergenerational relations  
(2) Resistant and renegotiate the traditional division of gender roles  
(3) Use the emotional and instrumental resources in the family and kinship to overcome challenges | “It was an instinctive reaction, I didn’t want to do certain things, because I hadn’t been with her for a long time and I wasn’t used to doing certain things with her any more. It is still rare for me to hug her or tell her I love her. I don’t put my feelings into words much, so when she gives me a present she asks me if I’m happy or if I’m sad” (Caneva, 2015, p. 285)  
“Before I didn’t want to… I didn’t have it in Egypt… here after one year… my dad told me to put it on but I didn’t want to… I put it on in front of him at home… and when I went out I took it off… then I talked about it with my mum… I came back to Egypt and I chose by myself “cause everyone had it there… and I was the only one…” (Egyptian girl, 16 years old)” (Giuliani et al., 2017, p. 11)  
“The one I feel closest to is my cousin. She sets an example to follow. She is studying for two degrees, architecture and also business, because my uncle is an entrepreneur. She studies a lot, but she also knows how to party. She has a strong character, she is great at organizing things and making things work. She is the person I call if I have a problem. (Romanian female, grammar school, age 18, Padova)” (Saint-Blancat & Zaltron, 2013, p. 803) |
Second, children’s media brokering, language brokering, and adaption process reflect their agency. After family migration, children’s agency tended to change as children adapted to new environment much more faster than their parents, and children had the opportunity to make more independent decisions, especially in international migration where parents did not speak the language of the hosting country (Huang & Yeoh, 2011). Influenced by the school and peer groups, immigrant children adapted to the new culture and were more flexible with the norms and behaviors in New Zealand more quickly than their parents (Stuart et al., 2010). Similar findings are reported in the U.K., and the daughter–mother relationships were disrupted or transformed as mothers became more dependent on their daughters in the new country, while fathers survived and succeeded in challenging new conditions (Tanyas, 2012).

As summarized by Tanyas (2012, p. 705), “the degree of adjustment required in the context of family migration is closely linked with shifting dynamics in familial and gender roles.” Children have different actions; for example, British Chinese Children exercised agency in helping and teaching their parents about the new language or culture (Clayton, 2013). Immigrant teens in the U.S. helped their families to use the keyboard in their mother language, look up recipes, read news, and find movies from the native country (Clark & Sywyj, 2012) and connected their parents to community institutions and organizations (Katz, 2010). The Chinese immigrant children played an important role in shaping their parents’ discourse in the U.S. (He, 2016). As summarized by Tanyas (2012, p. 705), “the degree of adjustment required in the context of family migration is closely linked with shifting dynamics in familial and gender roles.” Children have different actions; for example, British Chinese Children exercised agency in helping and teaching their parents about the new language or culture (Clayton, 2013). Immigrant teens in the U.S. helped their families to use the keyboard in their mother language, look up recipes, and find movies from the native country (Clark & Sywyj, 2012) and connected their parents to community institutions and organizations (Katz, 2010). The Chinese immigrant children played an important role in shaping their parents’ discourse in the U.S. (He, 2016).

Table 3 (continued)

| Types of migration | Aspects of expressing and exercising agency | Strategies of exercising agency | Supporting quotations |
|--------------------|-------------------------------------------|---------------------------------|----------------------|
| Return migration of children | Selecting school (González et al., 2016) Adapting to the life in Mexico and getting used to changes in living standards (González et al., 2016) Making remigration decision after return migration (González et al., 2016) Coping with life in Tonga (Lee, 2016) | (1) Make a decision about schooling (2) Adapt and get used to changes in living standards (3) Make decisions to re-migrate to the U.S. or to other places in Mexico (4) Use different strategies to cope with new life and environment | “he selected the school he wanted to attend, and he now spends more time socializing with his friends after school” (González et al., 2016, p. 264) “We put them in a pile, whatever we don’t like anymore or don’t need, then we go to the market and sell; it’s hard but we are sticking together, we are together as a family” (González et al., 2016, p. 266) “A few months after arriving in Mexico, Flor decided to return to the United States to reunite with her father. Juany explained: ‘It was her decision, I couldn’t take that away from her, she came here with me and tried staying for a while; it didn’t work for her. Going back to her dad [to Oregon] was her choice and now she has to live with the consequences’” (González et al., 2016, p. 269) ‘I came here to learn the life in Tonga and my parents sent me over to learn how to work and [learn the] culture’. ‘It changed my life, helped me do everything, everything is easier over here than over there; I learned a lot’ (Lee, 2016, p. 259) |
| | | | |

Table 3 (continued)
but only half of them reported that their mothers knew about it; these girls showed non-disclosure in boyfriend relationships (Romo, Mireles-Rios, & Lopez-Tello, 2014). West African immigrant children were aware of their parents’ concerns about their friendships and the efforts taken to prevent their friendships, and they adopted different strategies to deal with parents’ concerns and efforts, including maintaining their friendships with both African and non-African peers and adhering to their parents’ requests and contending that friends served as a distraction from their education (Akinsulure-Smith et al., 2016). British Chinese children actively shaped and negotiated their socializing activities, such as resisting activities arranged by parents (Clayton, 2013).

Fifth, children exercise agency in the aspect of contributing to family well-being. Children’s agency in the street vending activities shows they were not the “baggage” that adult immigrants simply brought along, but they were contributors to family processes (Estrada, 2013; Estrada & Hondagneu-Sotelo, 2011). The Latino street vendor children contributed to their family’s economic well-being and advancement. The children recognized the economic constraints in their families, felt an obligation toward their families, and showed gratitude for and reciprocate their parents’ support. In addition to helping family business, children also did housework, were a role model for younger siblings, and provided child care for younger siblings to take on familial responsibilities (Clayton, 2013; Turjanmaa, Alitolppa-Niitamo, & Jasinskaja-Lahti, 2017).

Sixth, children exercise agency in the aspects of dealing with family bonds and family hierarchy. Hmong immigrant adolescent girls in the U.S. decided to run away, return home, leave again, or stay home due to four main reasons, including “fighting restrictions”, impulsive decision-making to go out to play, run away with minimizing the dangers, and returning home because of family bonds and wanting to be a good person (Edinburgh, Garcia, & Saewyc, 2013). Asian American young people reported that they wanted their parents to recognize who they were and rebelled against the hierarchies, including family, when they were young (Wang, Koh, & Song, 2015). For recent Chinese immigrant adolescents in Canada, influenced by immigrant poverty, unwavering parental support, and traditional Chinese culture, they either kept problems to themselves to avoid more family conflict, felt indebted to parental sacrifice, or shouldered family responsibilities at a tender age (Li, 2010). Migrant children from Central and Eastern Europe to Scotland or Ireland tended to function well despite periods of separation from parents and/or other family members, and they actively link the transnational families in social, emotional, and economic aspects (Moskal & Tyrrell, 2016).

Seventh, children make decisions about healthy eating, lifestyles, and physical activity participation. For Latino immigrant children in the U.S., healthy decision-making includes fruits, vegetables, and physical activity. Mothers influenced health and healthy eating, while friends encouraged unhealthy food choices (Kilanowski, 2016). These children felt varying degrees of uncertainty about healthy foods in social situations and make poor-quality decisions. One study has examined Chinese migrant young people’s agency in negotiating their lifestyles and physical activity participation in Australia. The findings show that young people, especially girls, lacked agency and critical discourse with their parents. The traditional Chinese family power relations limited their agency, and they often did not reach an agency of practice (Pang, Macdonald, & Hay, 2015).

Left-Behind Children

Left-behind children’s agency is expressed in the following ways. First, left-behind children were both care receivers and care providers in the context of migration. Young people’s experiences of care provision in transnational families reflect children’s agency (Pantea, 2012). For left-behind children in both Indonesian and Filipino, the absence of mothers may create vulnerabilities related to emotional support and lack of attention, and children were required to support mother’s double burden by performing domestic chores (Graham et al., 2012). Colombian children whose parents have migrated exercised agency in receiving and managing gifts and remittances and providing care for siblings; however, scholars have conflicting opinions about sibling caretaking. In the negative aspect, it is a type of child labor and not appropriate to children’s age and development; in the positive aspect, it is considered as acquiring autonomy and new responsibilities (Duque-Páramo, 2012). In addition to children’s care provision, left-behind children in South-east Asia exercised their agency in responding to care arrangements, which comprised three sets of responses, including resilience, reworking, and resistance (such as refusing to engage with the adults’ agendas) (Hoang et al., 2015). While many left-behind children in South-east Asia had no say over their care arrangements, some were able to assert their agency in influencing their parents’ decisions and eventually migratory behaviors (Lam & Yeoh, 2019a).

Second, children cope with their left-behind life. They manage changes in their life and manage their well-being. Left-behind children in South-east Asia had agency in
determining migration outcomes, playing an active role in managing their own well-being, coping with parental absence, and keeping the family together. Their agency was situated within the confines of a migrant household in various unique ways (Lam & Yeoh, 2019b). Left-behind children in Tajikistan showed resilience and can use coping strategies in their daily life to deal with the psychosocial costs of separation from migrant parents, and gender differences existed in their coping mechanisms. For example, boys spent their leisure time on social media networks and hung out or played sport with other boys, while girls felt overwhelmed by the caregivers’ household chores (Nazridod et al., 2019).

Third, children exercise agency in initiating communication with migrant parents. Left-behind children in the Philippines had access to modern communication technologies for connection and contact and the opportunity to practice individual agency in different ways. However, adults often acted as gatekeepers in the process (Graham et al., 2012).

Fourth, children are active actors in obtaining or disclosing information. Left-behind children in Romania gained power because they can choose to disclose or withhold information, while migrant parents may lose power while losing information. Those in grandparents’ care may try to undermine their control by manipulating their reduced mobility or computer illiteracy (Pantea, 2011).

**Independent Child Migration**

Independent child migrants were engaged in economic activities in Ghana, and they wanted to express their agency by contributing to family well-being and adopt strategies to reduce the burden faced by their parents or guardians (Amoah, 2020); many of them sent home remittances for household consumption (Kwankye, 2012). Unaccompanied minors from Zimbabwe to South Africa coped successfully despite being caught up in tensions between structure–agency and vulnerability–resilience; they neither expressed agency or resilience alone nor navigated vulnerability in isolation before, during, and after their migration journeys (Adefehinti & Arts, 2019).

**Family Reunification**

After reunifying with families who are migrating, children can exercise their agency in different aspects in the migration destination. First, children exercised their agency in negotiating intergenerational relations after reuniting with their mothers in Italy (Caneva, 2015). Children can define the kin relations and mothers’ roles and contribute to constructing the relations (Caneva, 2015). For Muslim immigrant adolescents reunified with their families in Italy, though obedience to parents was internalized in their values, they still mentioned some possible spaces for negotiation with the family (Giuliani, Olivari, & Alfieri, 2017). Second, children can negotiate gender roles. For reunified teenage daughters of Ecuadorian migrants both in Ecuador as well as in Southern Europe, they participated in the migration project of the transnational family, but simultaneously they implemented practices of resistance and renegotiation addressing the traditional division of gender roles; as caretakers, they provided care in the transnational household, both in the origin and destination, while showing a higher commitment to school; meanwhile, they negotiated their role both inside and outside of the family, challenging parents’ moral and sexual control strategies (Lagomarsino & Castellani, 2016). Muslim immigrant girls also dealt with the choice to wear the veil, such as putting on the veil in front of the father at home and taking it off when going out (Giuliani et al., 2017). Third, they can utilize the family and kinship resources to overcome challenges. Young immigrant Romanians and Moroccans in north-eastern Italy can transform the family’s material and emotional support into resources to overcome other challenges after re-joining their family (Saint-Blancat & Zaltron, 2013).

**Return Migration of Children**

Returned migrant children from the U.S. exercised agency in selecting the school to attend, adapting to life in Mexico, and getting used to living standards; some children decided to emigrate to the U.S. after returning to Mexico (González et al., 2016). For children of Tongan migrants who returned to their parents’ homeland, their perceptions of agency significantly shaped their responses to the cultural and physical environment, and their life in Tonga may influence their family dynamics (Lee, 2016).

In addition to the aspects reviewed and summarized above, some quantitative studies have used scales covering several smaller decisions (various matters) to measure children’s autonomy, independence, decision-making authority, and agency, such as staying out at night, friends, taking classes, dating, watching television, doing homework, doing household chores, going to bed, going back home after school and spending time outside school, spending money, clothes, hair, and makeup (Roche et al., 2015; Tran & Rafaelli, 2020; Varner & Mandara, 2014); or parent–child conflict frequency and intensity and children’s autonomy expectations for various everyday domains, such as chores, schoolwork, curfew, dating, family obligations, and going out (Bámara-Colbert, Umaña-Taylor, & Gayles, 2012, 2014;
have a comprehensive understanding of children’s agency.

ment language brokering (Roche et al., 2015). These smaller
caring, community language brokering, and home manage-
to measure adolescents’ situations of school language bro-
& Connolly, 2013). Language brokering scale was employed
ent activities was measured using a questionnaire (Dhariwal

Similarly, adolescents had less full disclosure and more partial
disclosure issues than mid-adolescents among Chinese American families (Yau, 2016). Different generations of immigrants also have different lev-
evels of independence in decision-making; first-generation
migrants tended to have less independence in decision-
making than their more recent counterparts (Hamilton, 2010).

Migration Influencing Children’s Agency

Children’s agency and degrees of freedom are highly vari-
able and shaped by varied intersecting factors (Graham et al.,
2012). Family members tend to have different interests, and
family migration decision-making is based upon negotiating
individual influence and power within the family, often at
different stages in the process (Hutchins, 2011). Migration
may lead to the change of household dynamics. In summary,
children’s agency development mainly has two aspects in the
context of migration (Stuart et al., 2010; Turjanmaa et al.,
2017): (1) Children’s normative development issues. Chil-
dren, regardless of whether they are left behind, migrating,
or living with their parents in their hometown, may have
issues about agency development during their normative
developmental processes. (2) Migration’s influence and the
associated issues. Migration may have a positive or negative
influence on children’s experiences of agency. Migration and
the associated issues may complicate the normative develop-
mental processes (Stuart et al., 2010; Titzmann et al., 2015).

For children’s normative development, children’s agency
is influenced by different factors, such as age, cohort, and
ethnic group. Children are expected to exert more agency to
make decisions independently when getting older. The abili-
ties and levels of agency, granted by parents and acted on by
children, increased with children growing older among Brit-
ish Chinese children (Clayton, 2013). Older African Ameri-
can adolescents had less full disclosure and more partial
disclosure about activities and relationships with peers than
their younger peers (Bakken & Brown, 2010). Similarly,
migration (Clayton, 2013; Goh & Kuczynski, 2009), especially fostering independence (Glozman & Chuang, 2019) and challenging the gender-based norms (different in the sending origins and the destinations) (Giuliani et al., 2017).

Household dynamics are changing in the process of migration, and different levels of authority and freedom occur in different stages of the migration cycle (Pantea, 2011). For example, migrant parents may lose control over daily actions, while previously subordinate groups, such as children, remaining parents, and grandmothers, gain authority positions; after reunitifying with families, migrants may experience a sense of lost control and exclusion and revitalize the direct control and conflict of influence (Pantea, 2011).

In the context of migration, children’s exercising of agency is also influenced by the intergenerational discrepancy and the conflicts of interests between them and their parents (Pantea, 2011) and the intergenerational ambivalence (Luescher & Pillemel, 1998; Sime & Pietka-Nykaza, 2015). On the one hand, the discrepancy could be interpreted as a developmental phenomenon, and adolescents need to strive for autonomy, whereas parents are concerned with maintaining order in the family and protecting their children from harm (Jensen & Dost-Gözkan, 2015). On the other hand, left-behind children and parents have to deal with parent–child separation, and migrant parents and children are confronted with the acculturation gap, making them have different opinions on agency and autonomy and making children’s normative development more complicated. The discordance in acculturation between parents and children may exacerbate the original problems and lead to new problems, or in the positive aspect, help to solve these problems.

The intergenerational discrepancy, intergenerational conflict, or adolescent non-disclosure is not always considered as a negative component of parent–adolescent relationship, but is generally seen as a normal manifestation of the process of individual identity development and helpful to draw privacy boundaries (Kapadia & Miller, 2005; Stuart et al., 2010; Yau, 2016).

The feminization of migration greatly influences children’s agency. Mothers’ migration usually complicates the household dynamics as it challenges traditional gender-based norms, and left-behind husbands and children have to hold new roles and responsibilities (Graham et al., 2012). Moreover, children whose parents get divorced during the migration process have to face different layers of family transformations (Pantea, 2011).

Discussion

Although an increasing number of studies have examined children’s agency in the context of migration, there is not a systematic review to compare and summarize children’s actions of exercising agency. This systematic review describes the current knowledge of children’s and adolescents’ behavioral aspects of agency within families in the context of migration. The review searched and assessed English-written articles published in academic journals in or after 2010, and 65 articles were included in the final review, including 41 qualitative studies, 16 quantitative studies, and 8 mixed-methods studies. These studies show children have different levels of behavioral agency in the migration-decision-making process, and children have different strategies to deal with daily living with independent migration, family migration, family separation, or return migration.

Children are not passive bystanders in the process of migration, and they socially navigate their lives, negotiate resources, express their feelings, and make decisions about their life (Abrego, 2014; Dreby, 2010; González et al., 2016; Huang & Yeoh, 2011). As summarized by one study, “autonomy in decision-making was a continuous variable that reflected a continuum from parents making decisions independently to adolescents making decisions independently” (Varner & Mandara, 2014, p. 676). Similarly, children’s agency in the migration decision-making process and daily life after the migration is also a continuous variable ranging from a low level of agency (parents make decisions independently) to a high level of agency (children make decisions independently). Children and adolescents are not a homogeneous group; they have different migration and left-behind statuses, play different roles in the migration, and have varying levels of agency within families in the context of migration. In addition to the levels of agency of children across different contexts, children may also have varying levels of agency at different stages of migration in the same context (González et al., 2016; Huang & Yeoh, 2011). In the initial decisions of migration or return migration, most children tend to have limited agency; however, they used different strategies to influence their parents and manage their well-being in daily life after the initial decision. For example, some children had low levels of agency at the initial migration decision-making stage; however, when migrant children adapted well and quickly to their destinations, they exercised high levels of agency to decide matters in their daily life (Huang & Yeoh, 2011). Similar findings are also reported among left-behind children and returned migrant children. For example, some left-behind children exerted little agency about their parental migration decisions, but they exercised higher levels of agency as they could choose to disclose or withhold information to their migrant parents (Pantea, 2011). These children can also contribute to family well-being and deal with family bonds, hierarchy, and expectations. These findings show that children are not merely victims, passively influenced by migration. However, they have a certain level of personal growth and have different
strategies to exercise their agency in different aspects of life living with migration, and the parent–child dynamics changes with their increasing personal growth.

Nevertheless, these findings do not mean that migration only positively influences children’s agency and well-being. Children’s vulnerability is manifest in previous research. Children’s agency in the context of migration is not exclusively influenced by migration. Many factors play roles in children’s exercising agency, and migration may complicate the situation (Pantea, 2012). Agency is not the same as well-being—children can have agency which undermines their wellbeing, for example they take risks, and for left-behind children they tend to have a lot of agency because they have little supervision, but on the other hand they are unhappy because their parents are away; immigrant children may also take care of various matters independently as their parents are busy with their work in the migration destination. Children may have ambivalent feelings about their agency and well-being in the context of migration.

This review has several methodological implications which can inspire future research design. First, agency is a context-based concept, behaviors in one context are considered exercising agency, while in another context, they are not considered exercising agency. For example, children providing care for other family members can be considered as exercising agency to respond to life challenges or as being victims who have to take on extra responsibilities (Duque-Páramo, 2012). Such varied perceptions can be related to cultural difference. There is not a well-designed framework or questionnaire to make meaningful comparison of children’s agency in different cultural backgrounds. Some scholars think it is problematic to quantify human agency and state that agency should be described qualitatively and contextually (Abebe, 2019; Durham, 2008).

Nevertheless, one publication argues that confining research to a “local” context may obscure important larger-scale structures and phenomena, and thus agency could be situated within broader contexts (Hoang & Yeoh, 2015). Although we agree that agency should be described contextually, it is still important to quantitatively measure children’s agency. As scholars have mentioned, “the degree of agency, the impact of that agency, let alone the nature of that agency” is not clear (Bluebond-Langner & Korbin, 2007, p. 242). What is the appropriate level of children’s agency at different ages? What kind of agency should be considered to be good? These two questions still need further research, and one possible way to measure the appropriate level and type of agency is to measure whether the agency is suitable for children’s short-term and long-term well-being. As it is challenging to know the appropriate level of children’s agency in the short term, longitudinal study and follow-up study is needed to evaluate the long-term impact of children’s agency and to evaluate what is the appropriate level and type of children’s agency (Pang et al., 2015). Mixed-methods research is helpful to describe agency quantitatively, qualitatively, and contextually.

Second, both children’s agency and vulnerability need to be considered in future research. Young people neither cope well with parental absence because they have agency nor are they unavoidable victims of their situations. The former supports the “policy approach that favors migration and underrates its costs for young people (politics of agency),” while the latter supports that a policy approach “that singles out young people with migrant parents as victims of migration (politics of suffering)” (Pantea, 2012, p. 252). Focusing exclusively on children’s agency or children’s vulnerability is both biased (Pantea, 2012). Children’s agency is embedded within, expressed through, and influenced by societal provisions, processes, and institutions (Adefehinti & Arts, 2019). Children could exert certain levels of agency to deal with their daily lives while they are influenced by various social, structural, economic, and environmental constraints (Choi, Yeoh, & Lam, 2019). However, with limited resources in the constrained circumstances, some children are sensitive to these factors and more likely to be influenced and have a low degree of control over their life. It is important to help them remove the barriers and ensure equal access to resources, opportunities, services, and welfare.

Third, focusing upon children’s agency does not mean to marginalize the important place of adults in children’s lives, and it is important to pay attention to practices and processes that adults and children use to position themselves in relation to each other as children and as adults (Alanen, 2001; Mannion, 2007). Both children’s and parents’ perspectives (parent–child dyads) need to be included. Migrant children and young people have recognized their dependency on their families and the decisions made by their parents, either economically, role modeling, or in other ways; and children’s formal and legal dependency on parents would end with their age approaching 18 (Rübner Jørgensen, 2016). Children’s age is still an important factor when examining the parental influence on children’s agency.

Fourth, scholars argue that agency is not only about the capability to achieve positive changes but also by the capability to endure, suffer, and persist when facing power and sociality, as indicated by research exploring the concept of “bonded agency” (Cense, 2014; Mahmood, 2001). Challenging the prevalence of freedom-centered approach in research of agency, the “alternative modes of agency” can be interpreted as “enduring and negotiating one’s embeddedness.
in relations of power and thick webs of sociality” (Phảm, 2013, p. 29).

Fifth, children’s agency does not need to manifest in “big” ways or lead to “major” changes (James & James, 2004; Lam & Yeoh, 2019b). The outcomes of exercising agency may not be immediate but may become evident in the long term. Exercising of agency is not a one-off event, instead it is an ongoing process. Children may have varying levels of agency in different aspects of their lives. Agency means simply decision-making and the broader capacity to intentionally act upon the world (Bluebond-Langner & Korbin, 2007). Sixth, coupled with migration, the context of the COVID-19 pandemic may make children’s agency more complicated. The new context should be considered in future research on children’s agency.

In addition to the contributions, this review has some limitations. First, only English articles published in academic journals in or after 2010 were included, which may have bias, while other types of articles, articles published in non-English articles, and articles published before 2010 were excluded. Second, this review focused on the behavioral aspect of agency, while the perceptions of agency were not fully described. Third, this article focuses on children’s agency within the family. In contrast, children’s agency in the school, in the community, and in the social activities were not included, and children’s agency outside their household may be related to their agency within the household. These aspects could be considered in future systematic reviews of children’s agency. Fourth, some of the studies include young people younger and older than 18 years old, and some of the studies include both migrant children and native children or refugee children, which makes it difficult to count the number of children involved in or influenced by migration and aged 0–18.

**Conclusion**

Decisions made by families have important implications for children, and the power dynamics within families may change when family members migrate. To better understand the state of the research, this systematic review summarizes the literature on children’s exercising of agency in the family’s migration decision and on a daily basis in the process of migration. The review revealed that children can have limited, moderate, and higher levels of agency in the migration related decisions. In different types of migration, children’s agency is exercised in different aspects of daily life living with migration. Different activities can be considered as exercising of agency. Examples include children negotiating intergenerational relations after family reunification, left-behind children’s information disclosure and secretive behavior, migrant children’s media, and language brokering, and so on. Various factors play a role in children’s agency and normative development, and migration can influence children’s agency either positively or negatively and may make children’s normative issues more complicated. Children’s agency is important to their well-being, and it is exercised in specific spaces and places. Adults who work with children should pay attention to children’s voices and perspectives and understand children’s exercising of agency in specific spaces and places.

**Appendix**

See Tables 4, 5, 6, and 7.
Table 4 List of included articles

| Authors (year)       | Country/region | Journal                        | Type of study (detailed) | Type of study | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|----------------------|----------------|--------------------------------|--------------------------|---------------|----------------------------|--------------------------------|--------------------------------------|------------------------------------------|----------------|---------------|-------------------|
| Adefehinti and Arts  | South Africa   | Children's Geographies        | Qualitative              | NA            | Independent child migrants | 18 ZUMs in Makhado: 15 in an all-boys shelter funded and managed by a non-profit organisation and 3 (only 1 girl) living out-of-shelter | 11–17                                   | 1, 5.6%                                                | Use excerpts and typological narratives to present and analyse the findings | Strong quality |
| Akinsulure-Smith et al. | USA         | Journal of Child and Family Studies | Qualitative              | NA            | Immigrant children and parents | 31 West African immigrant parents and 25 adolescents | 12–21, M = 16.00                  | 12, 48.0%                                       | Focus group sessions and individual interviews | Grounded theory approach using ATLAS.ti software | Strong quality |
| Amoah (2020)         | Ghana         | Child Indicators Research     | Mixed-methods            | A concurrent mixed method design based on cross-sectional data | Independent child migrants | Children who had migrated independently from any of the three northern regions of Ghana to Kumasi and lived without any family: (1) quantitative: 156 children; (2) qualitative: 14 children; 11 children took part in both studies | (1) 12–17, M = 14.8, SD= 1.7       | (1) 130, 83.3%                                     | Quantitative: descriptive analysis and ordinal logistic regression using SPSS Qualitative: hybrid thematic techniques | Strong quality |
| Authors                        | Country/region | Journal                               | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|-------------------------------|----------------|---------------------------------------|---------------|--------------------------|-----------------------------|-------------------------------|-------------------------------------|----------------------------------------|----------------|---------------|------------------|
| Ashbourne and Bao-baid (2014) | Canada         | Qualitative Report                    | Qualitative   | Grounded Theory Methodology, Narrative Analysis methodology | Immigrant children and parents | 10 Adolescents migrating from countries of origin in the Middle East to Canada | 15–20, M = 17.4 | 5, 50.0% | Interviews as part of a larger project | Narrative Analysis; situated within a social constructionist theoretical perspective | Strong quality |
| Bakken and Brown (2010)       | USA            | Journal of Research on Adolescence    | Qualitative   | NA                       | Immigrant children and parents | Parents: 14 African American and 8 Hmong primary caregivers Children: 22 self-identified African American and 11 Hmong adolescents in 6th–12th grades | 11–19 | NA, 69.0% | Individual semi-structured interviews; Interim analysis to update the interview protocol | An iterative and sequential pattern coding technique, coding of categories and comparison analyses; two-way ANOVAs, χ² distributions, two-sample Wilcoxon’s test | Strong quality |
| Authors (year)       | Country/region | Journal                        | Type of study   | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis                                      | Quality assessment |
|---------------------|----------------|--------------------------------|-----------------|--------------------------|-----------------------------|--------------------------------|-------------------------------------|-------------------------------------|-----------------|--------------------------------------------------|---------------------|
| Bámaca-Colbert et al. (2014) | USA           | Developmental Psychology       | Quantitative    | Longitudinal             | Immigrant children and parents | 320 Mexican-origin girls living in a metropolitan area in the Southwestern United States and not experienced sexual intercourse by T1; Follow-up surveys were completed in 2009 (T2) and 2010 (T3) by 175 females | 11–17 at Time 1 | 320, 100% | Surveys                                      | Descriptive analysis, bivariate correlations, cox proportional hazards models | Strong quality |
| Bámaca-Colbert et al. (2012) | USA           | Developmental Psychology       | Quantitative    | Cross-sectional          | Immigrant children and parents | 271 Dyads (Mexican-origin females and their mothers), including (1) 129 7th graders; (2) 142 10th graders | (1) 12–14, M = 12.26, SD = .46 (2) 14–17, M = 15.20, SD = .43 | 271, 100% | Surveys                                      | Descriptive analysis, correlations, multivariate analyses of variance (MANOVAs), and multiple group path analysis using Mplus 3.1 | Strong quality |
Table 4 (continued)

| Authors (year) | Country/region | Journal | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|----------------|----------------|---------|---------------|-------------------------|-----------------------------|-------------------------------|-------------------------------------|------------------------------------------|----------------|--------------|-------------------|
| Caneva (2015)  | Italy          | Childhood | Qualitative    | NA                      | Family reunification        | 28 Latin American and East European children who emigrated to Italy at different ages to rejoin their mothers, from a larger sample of 105 children | 13–21 | 13, 46.4% | Individual interviews | NA | Moderate quality |
| Cense (2014)   | Netherlands    | Culture, Health and Sexuality | Qualitative | NA                      | Immigrant children and parents | 46 Narrative interviews with Dutch young people from different minority ethnic communities, including Turkish, Moroccan, Surinamese and Antillean origin | 12–22 | 25, 54.3% | Open narrative interviews and drawing lifeline | Crang’s (2007) system of 'open' and 'axial' coding using qualitative data analysis software | Strong quality |
| Authors          | Country/region | Journal                | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|------------------|----------------|------------------------|---------------|--------------------------|----------------------------|--------------------------------|--------------------------------------|----------------------------------------|-----------------|---------------|-------------------|
| Clark and Sywyj  | USA            | Feminist Media Studies | Qualitative   | Participatory Action Research, ethnographic study | Immigrant children and parents | Open-ended surveys among 146 high school students, many of whom are English language learners; interviews with 16 young people and 5 of their parents; participant observation with more than 60 students and in-depth interviews with the high school principal, faculty members, and several staff members | Some children were 14–17 | NA | Semi-structured interviews, open-ended surveys, participant observation | Constant comparative method; grounded theory and discourse analysis | Moderate quality |
| Authors (year)       | Country/ region | Journal                                  | Type of study     | Type of study (detailed)                  | Children’s migration status | Characteristics of participants | Children’s age (years) at interview | Children’s female frequency, percentage | Data collection                  | Data analysis                     | Quality assessment |
|---------------------|-----------------|------------------------------------------|-------------------|------------------------------------------|-----------------------------|---------------------------------|----------------------------------|--------------------------------|-----------------------------------|----------------------------------|-------------------|
| Clayton (2013)      | UK              | Journal of Early Adolescence             | Qualitative       | Repeat interviews over a 9-month period  | Immigrant children and parents | 12 British Chinese families with 1 parent and 1 child in each family | 11–14                            | 8, 66.7%                          | Individual repetitive interviews | The job of indexing, or slicing the data set, was done manually with the aid of “Microsoft Office; thematic coding and conceptual map, abductive process | Strong quality       |
| Dhariwal and Connolly (2013) | India and Canada | Journal of Research on Adolescence | Quantitative      | Cross-sectional                          | Immigrant children and parents | 1316 South Asian youth recruited in India and Canada | 17–23, M = 19.03, SD = 1.30 | 51.0% | Self-report English questionnaire | &chi;2 Goodness of fit tests; a MANOVA; a path analysis; a post hoc analysis using the multi-sample testing approach | Strong quality       |
| Authors (year)         | Country/region | Journal                                | Type of study | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|-----------------------|----------------|----------------------------------------|---------------|-----------------------------|---------------------------------|--------------------------------------|--------------------------------------|-----------------|-------------|-------------------|
| Duque-Páramo (2012)   | Colombia       | Journal of Latin American and Caribbean Anthropology | Qualitative   | NA                          | Left-behind children            | 20 Children in Bogota and 29 in Risaralda; parents living abroad, teachers, psychologists, fathers who had migrated and returned because their children fell ill, a journalist, and school principals | Some children were around 11–14 | NA            | Individual interviews using semi-structured guide, group interviews using drawings | Relevant emergent themes | Moderate quality |
| Edinburgh et al. (2013) | USA           | Health Care for Women International    | Qualitative   | NA                          | Immigrant children and parents | 11 Sexually-exploited runaway Hmong girls, enrolled in the Runaway Intervention Program | 13–16                              | 11, 100%        | Video diaries    | A coding process outlined by Sandelowski, Docherty, and Emden (1997), quasi-deductive process | Strong quality   |
| Authors                  | Country/region | Journal                                      | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|-------------------------|----------------|----------------------------------------------|---------------|--------------------------|-----------------------------|-------------------------------|-----------------------------------|----------------------------------------|----------------|---------------|-------------------|
| Eichelsheim et al. (2010) | The Netherlands | Social Psychiatry and Psychiatric Epidemiology | Quantitative  | Cross-sectional           | Immigrant children and parents | Study 1: 288 adolescents of Dutch and Moroccan origin all attending lower secondary education Study 2: 306 adolescents of Dutch and Moroccan origin | (1) 12–17, M = 14.9 (2) 12–15, M = 13.2 | (1) 166, 57.6% (1) 151, 49.3% | Questionnaires | Multigroup structural analyses using structural equation modeling in LISREL 8.54 | Strong quality |
| Estrada-Martinez et al. (2011) | USA            | Journal of Youth and Adolescence             | Quantitative  | Cross-sectional           | Immigrant children and parents | 16,615 Who self-identified as non-Latino White, non-Latino Black, Cubans/Cuban American, Mexicans/Mexican-American/Chicano, and Puerto Rican origin and without missing values on violence scores | Average 16 (SE = .12) | 49.0% | Data from the National Longitudinal Study of Adolescent Health, Wave 1 | Post-stratification weights, using SAS 9.3 PROC SURVEY procedures; Descriptive analysis, ANOVAs and χ²’s, ordinal logistic regression, a systematic analysis, stratified analyses | Strong quality |
| Authors                          | Country/ region | Journal                        | Type of study      | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|---------------------------------|-----------------|--------------------------------|-------------------|-------------------------|-----------------------------|--------------------------------|-------------------------------------|---------------------------------------|-----------------|---------------|---------------------|
| Estrada (2013)                  | USA             | Childhood                      | Qualitative       | NA                      | Immigrant children and parents | 20 Latino immigrant children and youth and 3 parents | 10–18 (21)                       | 16, 80.0%                             | 9 Months of participant observation and 20 in-depth interviews using semi-structured guide | NA             | Strong quality |
| Estrada and Hondagneu-Sotelo (2011) | USA            | Journal of Contemporary Ethnography | Qualitative Ethnography | Immigrant children and parents | 20 Latina/o adolescents who sell merchandise on the streets or parks of Los Angeles with their parents in a street vending site in East Los Angeles | 10–21                           | 16, 80.0%                             | 9 Months of ethnographic field observations and 20 in-depth semi-structured interviews | Coding the data for themes and analysis; selected particularly representative quotes as evidence for this article; extended case method and grounded theory | Strong quality |
Table 4 (continued)

| Authors (year) | Country/region | Journal | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|---------------|----------------|---------|---------------|--------------------------|-----------------------------|-------------------------------|-----------------------------------|--------------------------------------|---------------|---------------|-------------------|
| Fernandez et al. (2018) | USA | Journal of Youth and Adolescence | Quantitative | Longitudinal | Immigrant children and parents | 209 Non-Hispanic White or Hispanic students in middle schools in Texas. At Wave 1, the 209 early adolescents were in the 6th and 7th grades and at Wave 2 students were in the 7th and 8th grades | M = 11.97, SD = 0.62 at Wave 1 M = 12.9, SD = 0.65 at Wave 2 | 141, 67.5% | Two-wave questionnaire survey | Descriptive analysis, zero-order correlations, cross-lagged path models, alternate analyses, using Mplus 7.4 | Strong quality |
| Fung et al. (2017) | Hong Kong, Mainland China and USA | Frontiers in Psychology | Quantitative | Cross-sectional | Immigrant children and parents | 419 4th and 5th grade children and their mothers from Chinese Families in Hong Kong, Mainland China, and the USA; 142 dyads from Beijing, 150 dyads from Hong Kong, and 131 dyads from Los Angeles | 7–12 | NA, 49.7% in BJ, 50.3% in HK, and 56.3% in LA | Descriptive analysis, one-way ANOVAs; a series of hierarchical regression analyses; a multiple-group path analysis using Structural equation modeling (SEM) | Strong quality |
| Authors                  | Country/region | Journal                      | Type of study                  | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection             | Data analysis | Quality assessment |
|-------------------------|----------------|------------------------------|--------------------------------|--------------------------|-----------------------------|-------------------------------|------------------------------------|---------------------------------------|-----------------------------|--------------|-------------------|
| Giuliani et al. (2017)  | Italy          | Social Sciences              | Qualitative                    | A cross-sectional qualitative design | Family reunification      | 45 Muslim immigrant adolescents coming from Morocco, Egypt and Pakistan, reunified adolescents | 14–19                             | 30, 66.7%                           | In-depth semi-structured individual interview | Thematic analysis | Strong quality       |
| Glozman and Chuang (2019)| Canada         | Journal of Adolescent Research | Qualitative                    | Constructivist grounded theory methodology | Immigrant children and parents | 24 Decimal- and second-generation Russian-speaking youths in Canada, 2.0 or decimal-generation immigrant | 15–19, M = 16.38, SD = 0.97 | 17, 70.8%                           | Semi-structured interviews, simultaneous data collection and analysis process | Grounded theory | Strong quality       |
| Authors           | Country/                  | Journal                                    | Type of study | Type of study (detailed)                                                                 | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|------------------|---------------------------|--------------------------------------------|---------------|-----------------------------------------------------------------------------------------|----------------------------|---------------------------------|-----------------------------------|----------------------------------------|----------------|----------------|-------------------|
| González et al. (2016) | Mexico                    | Mexican Studies/Estudios Mexicanos | Qualitative   | An ongoing longitudinal and multi-sited study, life-history narratives                   | Return migrant children    | 3 Children: Beto migrated from Santa Ana, California to Temixco, Morelos at age 15. Lulu migrated from Los Angeles, California to Tlahizapán, Morelos at age 13. Flor migrated from Portland, Oregon to Jiutepec, Morelos at age 11, and back to Portland, at age 12 | Around 11–15                | 2, 66.7% | Interviews, follow-up interviews, home visits, participatory observations, life-history narratives | Analyze three cases and identify themes; incorporate evidence from parents | Strong quality |
| Graham et al. (2012) | Indonesia and the Philip- | Environment and Planning A                | Mixed-meth-   | A mixed-method study using both quantitative and qualitative data                        | Left-behind children       | 10–12                           | NA                               | CHAMPSEA with questionnaire surveys and qualitative interviews | Quantitative: $\chi^2$ test Qualitative: NA | Moderate quality |
| Authors          | Country/region          | Journal                                      | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|------------------|-------------------------|----------------------------------------------|---------------|--------------------------|------------------------------|---------------------------------|-------------------------------------|----------------------------------------|-----------------|---------------|--------------------------|
| Hamilton (2010)  | USA                     | Sociological Focus                          | Quantitative  | Cross-sectional           | Immigrant children and parents | Adolescents with valid sample weights and totaled 18,210 | 12–19, M = 15.43, SD = 1.81 | 49.0%                                  | The 1995 wave of the National Longitudinal Study of Adolescent Health | Descriptive analysis; regression analysis; moderation analysis | Strong quality |
| He (2016)        | USA                     | Journal of Multilingual and Multicultural Development | Qualitative   | A lifespan approach       | Immigrant children and parents | English–CHL bilingual speakers, 5 child speakers and 8 teen speakers and their family members | NA                                  | Naturally occurring interactions during dinner time, playtime, homework time, and telephone/video call time; Informal interviews | Data analysis will take as a point of departure Goffman's (1981) concept of ‘footing’: the production of utterances and the reception of utterances | Strong quality |
| Hoang et al. (2015) | Indonesia, the Philippines, Thailand and Vietnam | Children's Geographies                      | Mixed-methods | A mixed-method study using both quantitative and qualitative data | Left-behind children          | Children less than 12 years of age left behind in Indonesia, the Philippines, Thailand and Vietnam, 3 cases including Dat, Wasana, and Calvin | ≤ 12 | NA | CHAMPSEA with questionnaire surveys and qualitative interviews | Descriptive analyses Qualitative: three illustrative case studies, utilising the framework proposed by Katz (2004) | Moderate quality |
| Authors (year)       | Country/region | Journal          | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|----------------------|----------------|------------------|---------------|--------------------------|-----------------------------|-----------------------------|------------------------------------|---------------------------------------|----------------|--------------|-------------------|
| Hoang and Yeoh (2015) | Vietnam        | Global Networks  | Qualitative   | NA                       | Left-behind children        | Carers of 37 left-behind children, of whom 18 were fathers, 11 mothers, 7 grandmothers and 1 a grandfather in 2009; fathers in 44 mother-migrant households in December 2011 and January 2012; 15 children from the participating households | 12–15                                | 7, 46.7%                          | Qualitative research component of CHAMP-SEA study, interviews | NA             |               | Moderate quality  |
| Huang and Yeoh (2011) | Singapore      | Geoforum         | Qualitative   | NA                       | Immigrant children and parents | 17 Children of study mothers who had arrived in Singapore with their mothers from China since 2001 | 14–19                              | 11, 64.7%                          | In-depth interviews | Transcribed into English for analysis | Strong quality |
| Authors      | Country/region | Journal                                      | Type of study       | Characteristics of participants | Children's age (years) at interview | Data collection                      | Data analysis                      | Quality assessment |
|--------------|----------------|----------------------------------------------|---------------------|---------------------------------|-------------------------------------|-------------------------------------|------------------------------------|-------------------|
| Huijsmans    | Lao PDR        | Geoforum                                     | Mixed-method study | Independent child migrants      | Below 9–Above 23                    | A household survey and a range of mostly qualitative methods, including focus group discussions, semi-structured interviews, and activity surveys; a range of secondary sources | Quantitative data (looking at outcomes) are juxtaposed with qualitative data (looking at processes) | Moderate quality |
| (2014)       |                |                                              | using qualitative and quantitative data; an overall ethnographic approach |                                  | (1) 41, 54.7% (2) 13, 50.0%       |                                     | Descriptive analysis               |                                 |
| Hutchins     | Australia      | Journal of Ethnic and Migration Studies      | Qualitative        | Immigrant children and parents  | 5–17                                | A household survey and semi-structured interviews | Participant observation and semi-structured interviews | NA                |
| (2011)       |                |                                              | A small-scale ethnographic study, phenomenological anthropology |                                  | 16, 61.5%                           |                                     |                                    |                   |
| Authors                      | Country/ region | Journal                                | Type of study      | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis                                                   | Quality assessment |
|------------------------------|-----------------|----------------------------------------|--------------------|-------------------------|------------------------------|-------------------------------|------------------------------------|----------------------------------------|-----------------|---------------------------------------------------------------|-------------------|
| Jensen and Dost-Gözkan (2015)| USA             | Journal of Research on Adolescence     | Quantitative       | Cross-sectional         | Immigrant children and parents | 100 Adolescent–parent dyads from Asian Indian and Salvadoran immigrant families | 14–18                              | 55, 55.0%                                             | Questionnaires; used quotes from interviews with participants in the “Discussion” section | Repeated measures analyses of variance (ANOVAs), Pearson-product moment correlations, univariate analyses of variance with SES as a covariate (ANCOVA), regression analyses | Strong quality |
| Juang et al. (2012)          | USA             | Journal of Family Psychology           | Quantitative       | Longitudinal            | Immigrant children and parents | 316 Chinese American adolescents who participated in a 3-wave longitudinal study. The analyses included all adolescents who had data for at least two waves (n = 276; 87%) | M = 14.8, SD = .73 at Wave 1, 9th and 10th grade | 57.0%                                   | Surveys                                               | Descriptive analysis and bivariate correlations; confirmatory factor analyses; latent growth curve modeling (LGM) in Mplus 6.1 | Strong quality |
Table 4 (continued)

| Authors (year) | Country/region | Journal | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|----------------|----------------|---------|---------------|--------------------------|---------------------------|-------------------------------|-----------------------------------|-------------------------------------|----------------|--------------|-------------------|
| Katz (2010)    | USA            | Journal of Children and Media | Qualitative | NA                    | Immigrant children and parents | 20 Parents and 22 children: 12 of the children were in middle school (grades 6 – 8) at the time of the interview, 7 were in high school (grades 9 – 12), 2 dropped out, and 1 was in university | 6th–12th grade, and 14–19 | 17, 77.3% | Interviews with open-ended questions, simultaneous collection, coding and analysis of data | “Constant comparative” method | Strong quality |
| Kilanowski (2016) | USA            | Journal of Pediatric Health Care | Mixed-methods | One-group, cross-sectional, mixed-methods pilot study | Immigrant children and parents | 24 Adolescents recruited from a Midwest summer migrant education program | 12–14 | 14, 58.3% | Demographic survey and two gender-specific focus groups | Quantitative: descriptive analysis, differences of means, correlation, and instrument psychometric analyses Qualitative: to identify categories and themes following guidelines by Morgan (1998) and Krueger (1998) | Strong quality |
Table 4 (continued)

| Authors          | Country/ region | Journal                          | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|------------------|-----------------|----------------------------------|---------------|--------------------------|----------------------------|----------------------------------|--------------------------------------|----------------------------------------|-----------------|---------------|--------------------|
| Kwankye (2012)   | Ghana           | Population Space and Place       | Quantitative  | Cross-sectional          | Independent child migrants | 451 Independent child migrants  | 10–24                                | 293, 65.0%                             | Data from a 2005 survey of independent child migrants in Accra and Kumasi | Proportions generated from simple cross-tabulations, $\chi^2$ analysis, and binary logistic regression analysis employing the SPSS | Strong quality |
| Lagomarsino and Castellani (2016) | Italy, Spain, Ecuador | Social Identities                | Qualitative   | Two transnational ethnographic studies and multi-sited ethnography | Family reunification | Ecuadorian children and their families in two medium-sized Southern European cities, Genoa and Seville, and in Ecuador | 13–18                                | NA                       | Ethnography, participant observation, in-depth interviews | NA | Moderate quality |
| Lalander and Herz (2018) | Sweden         | Nordic Journal of Migration Research | Qualitative   | An ongoing, qualitative long-term follow-up study | Independent child migrants | 23 Unaccompanied children living in Sweden; fewer 'unaccompanied' girls than boys arriving in Sweden | 15–22                                | 3, 13.0%                              | Repeated interviews and observations, informal conversations and ethnographic observations | Analysis on the basis of the outlined anchor child elements, searching for important themes and sub-themes | Strong quality |
| Authors (year)             | Country/region     | Journal                                | Type of study          | Type of study (detailed)                                                                 | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis                         | Quality assessment |
|---------------------------|--------------------|----------------------------------------|------------------------|-----------------------------------------------------------------------------------------|----------------------------|----------------------------------|--------------------------------------|-----------------------------------------|-----------------|----------------------------------------|------------------|
| Lam and Yeoh (2019a)      | Indonesia and the Philippines | Journal of Ethnic and Migration Studies | Mixed-methods study    | A mixed-method study using both quantitative and qualitative data                       |                            | Left-behind children             | 9–11                                 | NA                                      | CHAMPSEA with questionnaire surveys and qualitative in-depth interviews | Quantitative: crosstab with percentage Qualitative: conducted in native languages and translated into English for analysis | Moderate quality |
| Authors                  | Country/region          | Journal                               | Type of study         | Type of study (detailed)                                                                 | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection            | Data analysis                | Quality assessment |
|-------------------------|-------------------------|---------------------------------------|-----------------------|-----------------------------------------------------------------------------------------|-----------------------------|----------------------------------|--------------------------------------|----------------------------------------|--------------------------|---------------------------|----------------------|
| Lam and Yeoh (2019b)    | Indonesia and the Philipines | Population Space and Place            | Mixed-methods         | A mixed-method study using both quantitative and qualitative data                      | Left-behind children       | Quantitative: responsible adults, primary carers (who may also be responsible adults), and children aged 9 to 11 from roughly equal proportions of transnational and nonmigrant households in Indonesia (n = 513 households), and in the Philippines (n = 500 households) | 9–11                                | NA                                     | CHAMPSEA with questionnaire surveys and qualitative interviews | Quantitative: descriptive percentage Qualitative: thematic nodes, carefully analysed using NVivo | Moderate quality |
| Authors     | Year | Country/ Region | Journal                                                                 | Type of study                                      | Type of study (detailed) | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection                                                                 | Data analysis                                                                 | Quality assessment |
|------------|------|-----------------|-------------------------------------------------------------------------|----------------------------------------------------|--------------------------|----------------------------------|------------------------------------|----------------------------------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-------------------|
| Lee (2016) |       | Tonga           | Journal of Ethnic and Migration Studies                                 | Qualitative                                       | NA                       | Return migrant children          | 11–19                              | 18, 64.3%                             | In-depth interviews; questionnaire with mostly open-ended questions; a Facebook site which attracted comments on the topic; photo-elicitation; Talanoa sessions | Analysis based on the framework of agency                                  | Moderate quality |
| Li (2010)  |       | Canada          | Race Ethnicity and Education                                             | Qualitative                                       | Multiple-case narrative study from the critical socio-cultural perspective | Immigrant children and parents | 12 Recent Chinese immigrant adolescents | 13–19                              | 6, 50.0%                               | Open-ended interviewing and essay-writing activity                           | An inductive strategy to process the data (key words/sentences, common patterns and themes, cross-case comparison and synthesis); a thick description | Strong quality    |
| Authors          | Country/region | Journal                  | Type of study          | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection                          | Data analysis | Quality assessment |
|------------------|----------------|--------------------------|------------------------|--------------------------|-----------------------------|---------------------------------|-------------------------------------|----------------------------------------|------------------------------------------|---------------|-------------------|
| Mizen and Ofosu-Kusi (2013) | Ghana          | Sociological Review      | Qualitative            | Long-term and ongoing research, prolonged engagement | Independent child migrants | Around 80 children who claim the street as a place where they work, live and sleep | 9–17                                | Around 40, ≈50.0%                          | Chance encounter and informal conversation, interview and group discussions, an iterative process, close measure of children’s work and living over the previous 24 h and creating photographic accounts to discuss images | NA            | Strong quality    |
| Authors                  | Country/ region            | Journal                        | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|-------------------------|----------------------------|--------------------------------|---------------|--------------------------|----------------------------|---------------------------------|-------------------------------------|--------------------------------------|----------------|---------------|-------------------|
| Moskal and Tyrrell (2016) | Scotland and the Republic of Ireland | Children's Geographies         | Qualitative   | A grounded theory approach | Immigrant children and parents | Scotland: 65 members of Polish migrant families in Scotland (41 children and 24 adults) Ireland: 74 children in total from Central and Eastern European countries who had migrated to Ireland, 51 of whom were from Poland; 13 interviews were conducted with parents of some of the participating children | Some children were 9–17 | NA | Interviews and discussions; drawing pictures, mental maps, social networks, life journeys or through storytelling, discuss drawings/creations | Grounded theory approach to elicit and analyse qualitative data to identify important categories and concepts | Strong quality |
| Nazridod et al. (2019)   | Tajikistan                 | Journal of Ethnic and Migration Studies | Qualitative   | A qualitative methodology, microethnography | Left-behind children | 8 Teenagers in the City of Khorugh, Tajikistan | 12–18 | 4, 50.0% | In-depth interviews, participant observation, and participants’ diaries | A matrix of thematic content to identify central themes and the broad theme of 'coping strategies' emerged from this | Strong quality |
| Authors (year) | Country/region | Journal | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|---------------|----------------|---------|---------------|--------------------------|-----------------------------|-------------------------------|-------------------------------------|------------------------------------------|----------------|--------------|-------------------|
| Pang et al. (2015) | Australia | Sport Education and Society | Qualitative | A critical and interpretive ethnographic method | Immigrant children and parents | 12 Chinese young people from two schools | 10–15 | 10, 83.3% | Interviews individually or in pairs | Inductive content analysis and Saldana’s (2009) ‘Coding Manual for Qualitative Researchers’ using NVivo N8 | Strong quality |
| Pantea (2011) | Romania | Young | Qualitative | NA | Left-behind children | 19 Young people experiencing the migration of at least one parent | 14–20, M = 17 | NA | 21 In-depth interviews, simultaneous data collection and interpretation processes | Analysis based on the generation of categories at different levels of generalization, successive coding, facilitated by NVivo8 | Strong quality |
| Pantea (2012) | Romania | Journal of Youth Studies | Qualitative | NA | Left-behind children | 21 Young people in Romania who currently experience parental migration | 13–21, M = 18 | 16, 76.2% | 23 In-depth interviews, simultaneous data collection and interpretation | Coded and analysed using NVivo8 | Strong quality |
| Peltola et al. (2017) | Finland | Journal of Youth Studies | Qualitative | NA | Immigrant children and parents | 1st Data set: 9 young people | (1) 13–19 (2) 14–16 | (1) 9, 100% (2) 12, 46.2%; | Individual or paired interviews, group discussions | Analysed thematically | Strong quality |
| Authors (year)          | Country/region | Journal                                      | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|------------------------|----------------|----------------------------------------------|---------------|--------------------------|-----------------------------|--------------------------------|------------------------------------|----------------------------------------|-----------------|---------------|---------------------|
| Roche et al. (2015)    | USA            | Journal of Youth and Adolescence             | Quantitative  | Cross-sectional          | Immigrant children and parents | 118 Primarily Mexican- and Central American-origin 7th, 9th, and 11th grade children in Latino immigrant families living in suburban Atlanta | 12–18, M = 15.78, SD = .72 | 53.0% | Data from a school-based study of Latino-origin children of immigrant parents in suburban Atlanta | Prevalence and bivariate associations; Structural equation models using SPSS 22.0 and Mplus 7.11 | Strong quality |
| Roche et al. (2019)    | USA            | Journal of Youth and Adolescence             | Quantitative  | Longitudinal             | Immigrant children and parents | 248 Latinx 9th and 10th graders who completed surveys during fall (Time 1) and spring (Time 2) semesters of the school year | 9th and 10th grade 50.0% | School-based surveys | One-way ANOVAs with F-tests, latent profile analyses, structural equation models, and alternative models to examine the robustness of results using SPSS and Mplus | Strong quality |
| Romo et al. (2014)     | USA            | Journal of Adolescent Research               | Qualitative   | NA                       | Immigrant children and parents | 20 Mother–daughters dyads from Latina immigrant families | 13–14, M = 13.4, SD = 0.5 | 20, 100% | Interviews | Thematic analysis | Strong quality |
| Authors (year) | Country/region | Journal | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|---------------|----------------|---------|--------------------------|-----------------------------|-------------------------------|----------------------------------|--------------------------------------|----------------|---------------|-------------------|
| Saint-Blancat and Zaltron (2013) | Italy | Ethnicities | Qualitative | NA | Family reunification | 17–20 | 29, 50.9% | In-depth interviews, by means of everyday narrations | NA | Moderate quality |
| Sime and Fox (2015a) | Scotland | Children and Society | Qualitative | Qualitative exploratory research, case studies | Immigrant children and parents | Eastern European migrant children recently arrived in Scotland (1) 57 Children from a range of socioeconomic backgrounds (2) 29 Children, some from the focus groups, but also some newly recruited, to ensure a more diverse spread of nationalities | (1) 7–16 (2) 8–16 | (1) 31, 54.4% (2) 15, 51.7% | Focus groups and interviews, 23 in-depth family case studies (home visit, diaries of daily activities, photographs, and discussion) | A grid analysis approach and thematic coding and retrieving methods and using an NVivo 7 package | Moderate quality |
| Authors                  | Country/region | Journal                          | Type of study (detailed) | Children's migration status     | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|-------------------------|----------------|----------------------------------|--------------------------|---------------------------------|---------------------------------|-------------------------------------|---------------------------------------|-----------------|---------------|-------------------|
| Sime and Fox (2015b)    | Scotland       | Childhood                        | Qualitative              | An interpretivist paradigm       | Immigrant children and parents | Some children were 9–16           | NA                                    | Focus groups and in-depth case studies using children's diaries and photographs as prompts for conversations | Analysed thematically (Boyatzis, 1998) using an NVivo package to systematically code all transcripts | Moderate quality |
| Sime and Pietka-Nykaza (2015) | Scotland       | Language and Intercultural Communication | Qualitative              | An interpretivist paradigm, in-depth case studies | Newly migrated Polish families in Scotland: 18 Polish families with children, of which 14 had 1 child and 4 had 2 children, 22 children interviewed in total | 7–14                                 | NA                                    | In-depth case studies and in-depth interviews | Analysed thematically, using a technique advocated by Boyatzis (1998) | Strong quality  |
| Authors (year) | Country/ region | Journal | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|---------------|-----------------|---------|---------------|-------------------------|---------------------------|------------------------------|----------------------------------|----------------------------------------|----------------|--------------|-------------------|
| Stuart et al. (2010) | New Zealand | International Journal of Intercultural Relations | Qualitative | A grounded theory approach, an exploratory study | Immigrant children and parents | 39 Parents and adolescents from Asian, Middle Eastern and African backgrounds: 32 participants (16 pairs) from family units with at least 1 parent and 1 child being interviewed; 5 adolescents and 2 parents took part without other family members | 12–18 | NA | Interviews | Content analysis guided by the principles of grounded theory, using NVivo database |
| Tanyas (2012) | UK | Journal of Youth Studies | Qualitative | A narrative-based qualitative method | Immigrant children and parents | 12 Young Turkish migrants | 16–21 | 6, 50.0% | Semi-structured interviews | Narrative analysis |
| Titzmann et al. (2015) | Germany | Journal of Youth and Adolescence | Quantitative | Cross-sectional | Immigrant children and parents | Mother–adolescent dyads: (1) 197 native German dyads and (2) 185 immigrant dyads from the former Soviet Union | (1) $M = 14.7$, $SD = 2.5$ (2) $M = 15.7$, $SD = 2.7$ | (1) NA, 53.0% (2) NA, 60.0% | Questionnaires | Descriptive analysis, intra-class correlation (one-way random), test mean-level differences, multivariate regression, regression analysis, using AMOS 20.0 | Strong quality |
| Authors                  | Country/region | Journal                                     | Type of study | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|-------------------------|----------------|---------------------------------------------|---------------|--------------------------|-----------------------------|---------------------------------|-----------------------------------|--------------------------------------|----------------|---------------|---------------------|
| Tran and Raffaelli      | USA            | Journal of Research on Adolescence         | Quantitative  | Cross-sectional          | Immigrant children and parents | 232 Adolescent–parent dyads, ethnically diverse (38% Latino American, 32% European American, 30% African American) | 13–18, M = 15.82, SD = 1.18 at Time 1 | 58.6% | Parent–child data at Time 1 from a larger study conducted in 14 project-based youth development programs | Descriptive analysis; Cluster analysis; One-way ANCOVs; using SPSS, and latent profile analysis (LPA) using R and the mclust package | Strong quality |
| Turjanmaa et al.        | Finland        | Migration Letters                          | Qualitative   | NA                       | Immigrant children and parents | 80 1.5-Generation immigrant adolescents, the ethnic background of their families: African, Middle Eastern, Southern Asian and EU/FSU background | 13–18 | 35, 43.8% | Semi-structured interviews | Qualitative content analysis | Moderate quality |
| Authors            | Country/region | Journal                          | Type of study       | Type of study (detailed) | Children's migration status | Characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|-------------------|----------------|----------------------------------|---------------------|-------------------------|-----------------------------|-------------------------------|-------------------------------------|----------------------------------------|-----------------|---------------|-------------------|
| Varner and Mandara (2014) | USA           | Journal of Research on Adolescence | Quantitative        | Cross-sectional         | Immigrant children and parents | 796 African American families from the Maryland Adolescent Development in Context Study | 7th Graders 11–14, M = 12.21 | 394, 49.5% | Self-administered survey and interview | Descriptive analysis, bivariate correlations, one-way analyses of variances, latent variable structural equation modeling (SEM) with maximum likelihood estimation | Strong quality | |
| Wang et al. (2015)  | USA           | Asian American Journal of Psychology | Qualitative         | Narrative research      | Immigrant children and parents | 106 Asian American college students aged and 5 Chinese American families with preschool children | (1) 15–23 (2) Preschool, M = 40.6 months | (1) 81, 76.4% (2) 2, 40.0% | In-depth self-analysis and everyday dinner conversation | Narrative analysis | Strong quality | |
| Yau (2016)         | USA           | Journal of Adolescent Research   | Qualitative         | NA                      | Immigrant children and parents | 16 Second-generation Chinese American adolescents; 11 Immigrant parents from different Asian Chinese societies, mainly Hong Kong, Mainland China, and Taiwan | 13.5–17, M = 15 | 10, 62.5% | In-depth individual interviews | Typological strategies with two coders separately reading the data by typology | Strong quality | |
| Authors                    | Country/region | Journal          | Type of study | Type of study (detailed) | Children's migration status | Children's characteristics of participants | Children's age (years) at interview | Children's female frequency, percentage | Data collection | Data analysis | Quality assessment |
|---------------------------|----------------|------------------|---------------|--------------------------|-----------------------------|-------------------------------------------|----------------------------------|----------------------------------------|----------------|---------------|-------------------|
| Zúñiga and Hamann (2020) | Mexico         | Children's Geographies | Mixed-methods | A mixed methods study    | Return migrant children     | Quantitative: 1522 responses Qualitative: 191 interviews Mainly from children and adolescents who had prior experience of being enrolled in US schools | (1) 6–12 (2) 9–16 | NA                      | 638 Short narratives from the surveys and 191 stories from in-depth interviews | Descriptive analysis Classify, analyze and summarize illustrative, typical accounts | Moderate quality |

NA not available
Table 5  Quality assessment of qualitative studies

| Modified items for qualitative studies | Item 1 | Item 2 | Item 3 | Item 4 | Item 5 | Item 6 | Item 7 | Item 8 | Item 9 | Item 10 | Item 11 | Total score (not including N/A) | Possible maximum score (not including N/A) | A’s Total score / possible maximum score (%) | A’s Quality category | B’s Total score / possible maximum score (%) | B’s Quality category | Average score of A and B (%) | Average quality category |
|----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------------------------------|-----------------------------------------------|-----------------------------------------------|---------------------------------|-----------------------------------------------|---------------------------------|---------------------|----------------------|
| Akinsulu-Smith et al. (2016)           | 2      | 2      | 2      | 2      | 1      | 1      | 2      | 2      | 2      | 2      | 1      | 19                               | 22                                             | 86.4                                           | Strong quality                  | 86.4                                           | Strong quality                  |                      |                      |
| Caneva (2015)                          | 2      | 2      | 2      | 2      | 2      | 1      | 1      | 0      | 0      | 2      | 0      | 14                               | 22                                             | 63.6                                           | Moderate quality                | 63.6                                           | Moderate quality                |                      |                      |
| Cense (2014)                           | 2      | 2      | 2      | 2      | 1      | 2      | 2      | 0      | 2      | 0      | 0      | 17                               | 22                                             | 77.3                                           | Strong quality                  | 77.3                                           | Strong quality                  |                      |                      |
| Clark and Sywyj (2012)                 | 2      | 2      | 2      | 2      | 1      | 1      | 2      | 1      | 0      | 2      | 1      | 16                               | 22                                             | 72.7                                           | Moderate quality                | 72.7                                           | Moderate quality                |                      |                      |
| Clayton (2013)                         | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 1      | 21                               | 22                                             | 95.5                                           | Strong quality                  | 95.5                                           | Strong quality                  |                      |                      |
| Edinburgh et al. (2013)                | 2      | 2      | 2      | 2      | 1      | 2      | 2      | 2      | 2      | 2      | 1      | 20                               | 22                                             | 90.9                                           | Strong quality                  | 86.4                                           | Strong quality                  |                      |                      |
| Estrada (2013)                         | 2      | 2      | 2      | 2      | 2      | 1      | 2      | 0      | 2      | 2      | 1      | 18                               | 22                                             | 81.8                                           | Strong quality                  | 68.2                                           | Strong quality                  |                      |                      |
| Giuliani et al. (2017)                 | 2      | 2      | 2      | 2      | 1      | 2      | 2      | 2      | 2      | 2      | 1      | 20                               | 22                                             | 90.9                                           | Strong quality                  | 90.9                                           | Strong quality                  |                      |                      |
| Hoang and Yeoh (2015)                  | 2      | 2      | 2      | 2      | 2      | 1      | 1      | 1      | 0      | 0      | 2      | 0                                | 14                               | 63.6                                           | Moderate quality                | 63.6                                           | Moderate quality                |                      |                      |
| Hutchins (2011)                        | 1      | 2      | 2      | 1      | 2      | 2      | 2      | 0      | 0      | 2      | 2      | 16                               | 22                                             | 72.7                                           | Moderate quality                | 72.7                                           | Moderate quality                |                      |                      |
| Lagomarsino and Castellani (2016)      | 2      | 2      | 2      | 2      | 1      | 1      | 1      | 0      | 0      | 2      | 1      | 14                               | 22                                             | 63.6                                           | Moderate quality                | 59.1                                           | Moderate quality                |                      |                      |
| Llander and Herz (2018)                | 2      | 2      | 2      | 2      | 1      | 1      | 2      | 2      | 2      | 2      | 1      | 19                               | 22                                             | 86.4                                           | Strong quality                  | 77.3                                           | Strong quality                  |                      |                      |
| Lee (2016)                             | 2      | 2      | 1      | 2      | 2      | 1      | 1      | 1      | 0      | 2      | 0      | 14                               | 22                                             | 63.6                                           | Moderate quality                | 54.5                                           | Moderate quality                |                      |                      |
Table 5 (continued)

| Modified items for qualitative studies | Item 1 | Item 2 | Item 3 | Item 4 | Item 5 | Item 6 | Item 7 | Item 8 | Item 9 | Item 10 | Item 11 | Total score (not including N/A) | Possible maximum score (not including N/A) | A’s Total score/possible maximum score (%) | A’s Quality category | B’s Total score/possible maximum score (%) | Average score of A and B (%) | Average quality category |
|----------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------------------|---------------------------------------------|-----------------------------------------------|--------------------------------|---------------------------------------------|--------------------------------|-------------------------------|
| Mizen and Ofosu-Kusi (2013)            | 2     | 2     | 2     | 2     | 2     | 1     | 0     | 2     | 2     | 0     |       | 17                                             | 22                                           | 77.3                                           | Strong quality                  | 77.3                                         | 77.3                                         | Strong quality                  |
| Moskal and Tyrrell (2016)              | 2     | 2     | 2     | 2     | 2     | 1     | 2     | 1     | 2     | 2     | 0     | 18                                             | 22                                           | 81.8                                           | Strong quality                  | 81.8                                         | 81.8                                         | Strong quality                  |
| Nazridod, Pereira, & Guerreiro (2019)  | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 21                                             | 22                                           | 95.5                                           | Strong quality                  | 90.9                                         | 93.2                                         | Strong quality                  |
| Pang et al. (2015)                     | 2     | 2     | 2     | 2     | 2     | 1     | 2     | 2     | 0     | 2     | 1     | 18                                             | 22                                           | 81.8                                           | Strong quality                  | 77.3                                         | 79.5                                         | Strong quality                  |
| Pantea (2011)                          | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 0     | 2     | 1     | 19                                             | 22                                           | 86.4                                           | Strong quality                  | 81.8                                         | 84.1                                         | Strong quality                  |
| Peltola et al. (2017)                  | 2     | 2     | 2     | 1     | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 21                                             | 22                                           | 95.5                                           | Strong quality                  | 90.9                                         | 93.2                                         | Strong quality                  |
| Romo et al. (2014)                     | 2     | 2     | 2     | 1     | 2     | 2     | 2     | 2     | 2     | 2     | 1     | 20                                             | 22                                           | 90.9                                           | Strong quality                  | 86.4                                         | 88.6                                         | Strong quality                  |
| Saint-Blancat and Zaltron (2013)       | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 0     | 0     | 2     | 0     | 16                                             | 22                                           | 72.7                                           | Moderate quality                | 63.6                                         | 68.2                                         | Moderate quality                |
| Sime and Fox (2015a)                   | 2     | 2     | 2     | 2     | 2     | 1     | 1     | 2     | 0     | 2     | 0     | 16                                             | 22                                           | 72.7                                           | Moderate quality                | 68.2                                         | 70.5                                         | Moderate quality                |
| Sime and Fox (2015b)                   | 2     | 2     | 2     | 2     | 2     | 0     | 2     | 2     | 0     | 2     | 1     | 17                                             | 22                                           | 77.3                                           | Strong quality                  | 63.6                                         | 70.5                                         | Moderate quality                |
| Sime and Pietka-Nykaza (2015)          | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 0     | 2     | 1     | 19                                            | 22                                           | 86.4                                           | Strong quality                  | 77.3                                         | 81.8                                         | Strong quality                  |
| Modified items for qualitative studies | Item 1 | Item 2 | Item 3 | Item 4 | Item 5 | Item 6 | Item 7 | Item 8 | Item 9 | Item 10 | Item 11 | Total score (not including N/A) | Possible maximum score (not including N/A) | A’s Total score/possible maximum score (%) | A’s Quality category | B’s Total score/possible maximum score (%) | B’s Quality category | Average score of A and B (%) | Average quality category |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------------------------------|---------------------------------------------|------------------------------------------|------------------------------------------|---------------------------------------------|------------------------------------------|------------------------------------------|------------------------------------------|
| Stuart et al. (2010)                   | 2      | 2      | 2      | 2      | 2      | 2      | 1      | 2      | 1      | 2      | 2      | 20                             | 22                                          | 90.9                                     | Strong quality                           | 95.5                                        | 93.2                                     | Strong quality                           |
| Tanyas (2012)                         | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 1      | 21                             | 22                                          | 95.5                                     | Strong quality                           | 86.4                                        | 90.9                                     | Strong quality                           |
| Turjanmaa et al. (2017)               | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 1      | 1      | 1      | 1      | 02                             | 02                                          | 68.2                                     | Moderate quality                         | 72.7                                        | 70.5                                     | Moderate quality                         |
| Yau (2016)                            | 2      | 2      | 2      | 2      | 2      | 1      | 2      | 2      | 2      | 2      | 1      | 20                             | 22                                          | 90.9                                     | Strong quality                           | 90.9                                        | 90.9                                     | Strong quality                           |
| Adefehinti and Arts (2019)            | 2      | 1      | 2      | 2      | 2      | 2      | 1      | 2      | 2      | 2      | 1      | 18                             | 22                                          | 81.8                                     | Strong quality                           | 86.4                                        | 84.1                                     | Strong quality                           |
| Ashbourne and Baobaid (2014)          | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 1      | 20                             | 22                                          | 90.9                                     | Strong quality                           | 81.8                                        | 86.4                                     | Strong quality                           |
| Glozman and Chuang (2019)             | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 22                             | 22                                          | 100.0                                    | Strong quality                           | 95.5                                        | 97.7                                     | Strong quality                           |
| He (2016)                             | 2      | 2      | 2      | 2      | 1      | 1      | 2      | 2      | 2      | 0      | 2      | 17                             | 22                                          | 77.3                                     | Strong quality                           | 77.3                                        | 77.3                                     | Strong quality                           |
| Li (2010)                             | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 0      | 20                             | 22                                          | 90.9                                     | Strong quality                           | 81.8                                        | 86.4                                     | Strong quality                           |
| Bakken and Brown (2010)               | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 1      | 20                             | 22                                          | 90.9                                     | Strong quality                           | 90.9                                        | 90.9                                     | Strong quality                           |
| Katz (2010)                           | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 2      | 0      | 21                             | 22                                          | 81.8                                     | Strong quality                           | 86.4                                        | 84.1                                     | Strong quality                           |
| Pantea (2012)                         | 2      | 2      | 2      | 2      | 2      | 2      | 1      | 1      | 1      | 0      | 2      | 16                             | 22                                          | 72.7                                     | Moderate quality                         | 77.3                                        | 75.0                                     | Strong quality                           |
### Table 5 (continued)

| Modified items for qualitative studies | Item 1 | Item 2 | Item 3 | Item 4 | Item 5 | Item 6 | Item 7 | Item 8 | Item 9 | Item 10 | Item 11 | Total score (not including N/A) | Possible maximum score (not including N/A) | A's Total score/possible maximum score (%) | A's Quality category | B's Total score/possible maximum score (%) | B's Quality category | Average score of A and B (%) | Average quality category |
|----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|--------|---------------------------------|---------------------------------|----------------------------------------|----------------------------|----------------------------------|----------------------------|------------------------|------------------------|
| Estrada and Hondagneu-Sotelo (2011)    | 2      | 2      | 2      | 2      | 0      | 2      | 2      | 1      |        | 19       | 22     | 86.4                            | 22                              | 86.4 (Strong quality)                        | Strong quality               | 90.9                             | 88.6 (Strong quality)               |
| González et al. (2016)                 | 2      | 2      | 2      | 1      | 2      | 2      | 1      | 2      | 2      | 1        | 19     | 22                              | 86.4                            | 86.4 (Strong quality)                        | Strong quality               | 81.8                             | 84.1 (Strong quality)               |
| Huang and Yeoh (2011)                  | 2      | 2      | 2      | 2      | 1      | 1      | 1      | 0      | 2      | 2        | 17     | 22                              | 77.3                            | 77.3 (Strong quality)                        | Strong quality               | 77.3                             | 77.3 (Strong quality)               |
| Duque-Páramo (2012)                    | 2      | 2      | 2      | 2      | 1      | 1      | 1      | 0      | 1      | 0        | 14     | 22                              | 63.6                            | 63.6 (Moderate quality)                      | Moderate quality              | 59.1                             | 61.4 (Moderate quality)              |
| Wang et al. (2015)                     | 2      | 2      | 2      | 2      | 1      | 1      | 2      | 2      | 2      | 1        | 19     | 22                              | 86.4                            | 86.4 (Strong quality)                        | Strong quality               | 81.8                             | 84.1 (Strong quality)               |

A quality score of ≥.75 indicates strong quality (=2), a score between .55 and .75 moderate quality (=1), and a score ≤.55 weak quality (=0). In the checklist, 2 = Yes, 1 = Partial, 0 = No N/A not applicable.
### Table 6  Quality assessment of quantitative studies

| Modified items for quantitative studies | Item 1 | Item 2 | Item 3 | Item 4 | Item 5 | Item 6 | Item 7 | Item 8 | Item 9 | Item 10 | Item 11 | Total score (not including N/A) | Possible maximum score (not including N/A) | A’s Total score/possible maximum score (%) | A’s Quality category | B’s Total score/possible maximum score (%) | B’s Quality category | Average score of A and B (%) | Average quality category |
|-----------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------------------------------|---------------------------------------------|---------------------------------------------|-----------------------------------------------|-------------------------------|---------------------------------------------|-------------------------------|-----------------------|------------------------|
| Hamilton (2010)                         | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 2      | 2      | 22                            | 22                                           | 100.0                                         | Strong quality                  | 100.0                                         | Strong quality                  | 100.0                                         | Strong quality                  |
| Jensen and Dost-Gözkan (2015)           | 2     | 1     | 2     | 2     | 2     | 1     | 2     | 2     | 2     | 2      | 2      | 20                            | 22                                           | 90.9                                          | Strong quality                  | 95.5                                          | Strong quality                  | 93.2                                          | Strong quality                  |
| Roche et al. (2015)                     | 2     | 2     | 2     | 2     | 2     | 1     | 2     | 2     | 2     | 1      | 2      | 20                            | 22                                           | 90.9                                          | Strong quality                  | 90.9                                          | Strong quality                  | 90.9                                          | Strong quality                  |
| Tran and Raffaelli (2020)               | 2     | 2     | 1     | 2     | 2     | 1     | 2     | 2     | 2     | 2      | 2      | 20                            | 22                                           | 90.9                                          | Strong quality                  | 90.9                                          | Strong quality                  | 90.9                                          | Strong quality                  |
| Bámaca-Colbert et al. (2014)            | 2     | 2     | 1     | 2     | 2     | 1     | 2     | 2     | 2     | 2      | 2      | 20                            | 22                                           | 90.9                                          | Strong quality                  | 95.5                                          | Strong quality                  | 93.2                                          | Strong quality                  |
| Bámaca-Colbert et al. (2012)            | 2     | 2     | 1     | 2     | 2     | 1     | 2     | 2     | 2     | 2      | 2      | 20                            | 22                                           | 90.9                                          | Strong quality                  | 90.9                                          | Strong quality                  | 90.9                                          | Strong quality                  |
| Dhariwal and Connolly (2013)            | 2     | 2     | 1     | 2     | 2     | 1     | 2     | 2     | 2     | 2      | 2      | 20                            | 22                                           | 90.9                                          | Strong quality                  | 90.9                                          | Strong quality                  | 90.9                                          | Strong quality                  |
| Eichelsheim et al. (2010)               | 2     | 1     | 1     | 2     | 2     | 1     | 2     | 2     | 2     | 2      | 2      | 18                            | 22                                           | 81.8                                          | Strong quality                  | 81.8                                          | Strong quality                  | 81.8                                          | Strong quality                  |
| Estrada-Martínez et al. (2011)          | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 2     | 2      | 2      | 22                            | 22                                           | 100.0                                         | Strong quality                  | 100.0                                         | Strong quality                  | 100.0                                         | Strong quality                  |
| Fung et al. (2017)                      | 2     | 2     | 1     | 2     | 2     | 1     | 2     | 2     | 2     | 2      | 2      | 20                            | 22                                           | 90.9                                          | Strong quality                  | 86.4                                          | Strong quality                  | 88.6                                          | Strong quality                  |
| Juang et al. (2012)                     | 2     | 2     | 1     | 2     | 2     | 1     | 2     | 2     | 2     | 2      | 2      | 20                            | 22                                           | 90.9                                          | Strong quality                  | 90.9                                          | Strong quality                  | 90.9                                          | Strong quality                  |
| Roche et al. (2019)                     | 2     | 2     | 2     | 2     | 2     | 1     | 2     | 2     | 2     | 2      | 2      | 21                            | 22                                           | 95.5                                          | Strong quality                  | 90.9                                          | Strong quality                  | 93.2                                          | Strong quality                  |
| Titzmann et al. (2015)                  | 2     | 2     | 2     | 2     | 2     | 1     | 2     | 2     | 2     | 2      | 2      | 21                            | 22                                           | 95.5                                          | Strong quality                  | 95.5                                          | Strong quality                  | 95.5                                          | Strong quality                  |
Table 6 (continued)

| Modified items for quantitative studies | Item 1 | Item 2 | Item 3 | Item 4 | Item 5 | Item 6 | Item 7 | Item 8 | Item 9 | Item 10 | Item 11 | Total score (not including N/A) | Possible maximum score (not including N/A) | A’s Total score/possible maximum score (%) | A’s Quality category | B’s Total score/possible maximum score (%) | B’s Quality category | Average score of A and B (%) | Average quality category |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------------------------------|---------------------------------|------------------------------------|-------------------|--------------------------------|----------------------------|----------------------|----------------------|
| Varner and Mandara (2014)               | 2      | 2      | 1      | 2      | 2      | 2      | 2      | 2      | 2      | 2       | 21      | 22                              | 95.5                            | Strong quality          | Strong quality     | 95.5                          | Strong quality          | 95.5                          | Strong quality     |
| Fernandez et al. (2018)                 | 2      | 2      | 2      | 2      | 1      | 2      | 2      | 2      | 2      | 2       | 21      | 22                              | 95.5                            | Strong quality          | Strong quality     | 95.5                          | Strong quality          | 95.5                          | Strong quality     |
| Kwankye (2012)                          | 2      | 1      | 2      | 2      | 2      | 1      | 2      | 2      | 2      | 2       | 20      | 22                              | 90.9                            | Strong quality          | Strong quality     | 86.4                          | Strong quality          | 88.6                          | Strong quality     |

A quality score of ≥ .75 indicates strong quality (=2), a score between .55 and .75 moderate quality (=1), and a score ≤ .55 weak quality (=0). In the checklist, 2 = Yes, 1 = Partial, 0 = No N/A not applicable
Table 7 Quality assessment of mixed-methods studies

| Modified items for qualitative studies | Amoah (2020) | Graham et al. (2012) | Hoang et al. (2015) | Huijsmans (2014) | Kilanowski (2016) | Lam and Yeo (2019a) | Lam and Yeo (2019b) | Zúñiga and Hamann (2020) |
|----------------------------------------|--------------|----------------------|---------------------|------------------|------------------|---------------------|---------------------|-------------------------|
| 1. Question/objective sufficiently described? | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 2 |
| 2. Are the research question/s suited to qualitative inquiry? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 3. Study design evident and appropriate? | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 2 |
| 4. Context for the study clear? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| 5. Connection to a theoretical framework/wider body of knowledge? | 2 | 2 | 1 | 1 | 2 | 2 | 2 | 2 |
| 6. Sampling strategy described, relevant and justified? | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 0 |
| 7. Data collection methods clearly described, systematic, and appropriate for the research question? | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 |
| 8. Data analysis clearly described, systematic, and appropriate for the research question? | 2 | 0 | 1 | 1 | 2 | 1 | 2 | 1 |
| 9. Use of verification procedure(s) to establish credibility? | 2 | 0 | 0 | 0 | 2 | 0 | 2 | 0 |
| 10. Conclusions supported by the results? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
|                  | Amoah (2020) | Graham et al. (2012) | Hoang et al. (2015) | Huijsmans (2014) | Kilanowski (2016) | Lam and Yeoh (2019a) | Lam and Yeoh (2019b) | Zúñiga and Hamann (2020) |
|------------------|--------------|----------------------|---------------------|-----------------|------------------|----------------------|----------------------|--------------------------|
| 11. Reflexivity of the account? | 1            | 1                    | 1                   | 0               | 1                | 0                    | 0                    | 0                        |
| Modified items for quantitative studies |               |                      |                     |                 |                  |                      |                      |                          |
| 1. Question/objective sufficiently described? | 2            | 2                    | 2                   | 1               | 2                | 1                    | 1                    | 2                        |
| 2. Study design evident and appropriate? | 2            | 2                    | 2                   | 2               | 2                | 1                    | 2                    | 2                        |
| 3. Method of participant selection described and appropriate? Or source of information/input variables described and appropriate? | 2            | 2                    | 1                   | 1               | 2                | 2                    | 2                    | 2                        |
| 4. Participant characteristics sufficiently described? | 2            | 1                    | 1                   | 2               | 2                | 2                    | 1                    | 2                        |
| 5. Measures of agency and relevant variables well defined and robust to measurement/misclassification bias? Means of assessment reported? | 1            | 1                    | N/A                | N/A             | 2                | N/A                  | N/A                  | N/A                      |
| 6. Sample size appropriate? | 1            | 1                    | 1                   | 2               | 2                | 1                    | 1                    | 2                        |
| 7. Analytic methods described/justified and appropriate? | 2            | 1                    | 2                   | 1               | 2                | 1                    | 0                    | 1                        |
| 8. Some estimate of variance is reported for the main results? | 2            | 1                    | N/A                | N/A             | 2                | N/A                  | N/A                  | N/A                      |
|   | Amoah (2020) | Graham et al. (2012) | Hoang et al. (2015) | Huijsmans (2014) | Kilanowski (2016) | Lam and Yeoh (2019a) | Lam and Yeoh (2019b) | Zúñiga and Hamann (2020) |
|---|--------------|----------------------|---------------------|------------------|------------------|---------------------|---------------------|------------------------|
| 9. Controlled for confounding? | 2 | 1 | N/A | N/A | 0 | N/A | N/A | N/A |
| 10. Results reported in sufficient detail? | 2 | 1 | 2 | 2 | 2 | 1 | 1 | N/A |
| 11. Conclusions supported by the results? | 2 | 2 | 2 | 2 | 2 | 2 | 2 | N/A |
| Total score (not including N/A) | 41 | 31 | 27 | 26 | 41 | 25 | 28 | 25 |
| Possible maximum score (not including N/A) | 44 | 44 | 38 | 38 | 44 | 38 | 38 | 34 |
| A’s Total score/possible maximum score (%) | 93.2 | 70.5 | 71.1 | 68.4 | 93.2 | 65.8 | 73.7 | 73.5 |
| A’s Quality category | Strong quality | Moderate quality | Moderate quality | Moderate quality | Strong quality | Moderate quality | Moderate quality | Moderate quality |
| B’s Total score/possible maximum score (%) | 90.9 | 68.4 | 68.4 | 65.6 | 88.6 | 71.1 | 71.9 | 71.9 |
| Average score of A and B (%) | 92.0 | 69.4 | 69.7 | 67.0 | 90.9 | 68.4 | 72.8 | 72.7 |
| Average quality category | Strong quality | Moderate quality | Moderate quality | Strong quality | Moderate quality | Moderate quality | Moderate quality | Moderate quality |

A quality score of ≥ 0.75 indicates strong quality (=2), a score between 0.55 and 0.75 moderate quality (=1), and a score ≤ 0.55 weak quality (=0). For Hoang et al. (2015), Huijsmans (2014), Lam and Yeoh (2019a), and Lam and Yeoh (2019b), the quantitative data only show the general background; Zúñiga and Hamann (2020) only used the short narratives in the surveys. In the checklist, 2 = Yes, 1 = Partial, 0 = No

N/A not applicable
Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s40894-021-00175-0.

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Author Contributions ZD conceived of the study, designed the review, conducted literature searches, data screening and extraction, quality assessment and formal analysis, wrote the original draft of the manuscript, and reviewed and edited the manuscript; JX participated in the data screening and extraction, conducted quality assessment, and reviewed and edited the manuscript; IK and BL participated in designing the review and data screening, reviewed and edited the manuscript, and provided supervision. All authors read and approved the final manuscript.

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Declarations

Conflict of interest The authors report no conflict of interests.

Preregistration None.

Ethical Approval This study has used the existing literature to do the systematic review. The data have no individually identifiable information, and thus this research does not go through a full review by the Ethics Committee.

Informed Consent Using the existing literature, informed consent is not included in this research. The authors do not know who the participants are and do not have access to the participants’ contact information.

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* References marked with an asterisk indicate studies included in the systematic review

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