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LITERATURE REVIEW

Literature Review: Intervention for Sleep Problem on Preschooler

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ABSTRACT

Introduction: *About 30% preschoolers in the world was experienced sleep problem. Sleep problem intervention is needed for promoting growth and developing children.* ***Objectives:*** *To analyze the intervention for sleep problem in preschooler.* ***Methods:*** *This study uses systematic review design and conducted in Google scholar database. The search using keyword "Intervention and Sleep Problem and Preschool". Population and setting of this study is preschooler in community services. Intervention of this study is sleep problem intervention for preschooler and outcome measure is sleep. Inclusion criteria for articles were published in journal with English or Indonesian language, between 2011 until 2020, article with quantitative design or systematic review, title of article relevant with topic. Review articles were excluded, as well as those including participants with hospitalization, do not include applicable intervention.* ***Results:*** *A total of 15 studies were critical appraisal using tables that consist of information about sample, instrument, and type of intervention, result and conclusionin the review. Eight studies were targeting parents, two studies were targeting parents and preschooler and four studies were targeting preschooler. Most of intervention that applied to parents was sleep education about sleep hygiene that delivered directly, indirectly (internet), consultation, and modification of media use, Cognitive Behavioral Therapy (CBT), behavioral treatment and combined intervention. Duration of intervention is varies, most of study need time less than 1 month.* ***Conclusions:*** *Sleep education about sleep hygiene for parents is recommended intervention to solve sleep problem according to family center care. There were limited studies targeting parents and children directly.*

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Introduction

Sleep is a basic human need, especially in preschooler. Growth hormone reaches peak levels during deep sleep at night and has an important role of recovery,brain development, metabolic balance and influence on health and development over a long period of time in life especially in children(Tso et al., 2016).Circadian and ultradian rhythms in sleep patterns change dramatically over the first five years of life (Bathory&Tomopoulos, 2017). In children, sleep has an important role, especially in cognitive function. The importance of sleeping for children is to remember what children have learned, to organize thoughts, to predict outcomes, to avoid consequences, and to exhibit goal-directed behavior (referred to as "executive functions"), to react quickly, to work accurately and efficiently, to think abstractly and to be creative (Bathory&Tomopoulos, 2017).

One third preschooler in the world was experienced sleep problem. Epidemiological studies implemented in The United States, Italy,Australia, and Israel found that about thirty percent of preschool children have sleep problem (Touchette, 2011). In continent of ASIA, Up to 70% preschooler in China, more than 60% preschooler in Tehran, 109 preschooler in Israel suffering sleep problem (Amintehran et al., 2013; Kushnir&Sadeh, 2011; Liu et al., 2012).

Research by Mindell, Sadeh, Kwon and Goh shown some differences of cultural between Caucasian and Asian predominant (Mindell, Sadeh, Kwon, & Goh, 2013). In Indonesia more than 70% of children have some habit such as sharing bed and later bedtime and shorter nighttime sleep (Mileva-Seitz, Bakermans-Kranenburg, Battaini, &Luijk, 2017; Mindell et al., 2013). Several studies have shown factors that related sleep problem have not been identified together (Amintehran et al., 2013; Mindell et al., 2013; Speirs et al., 2014; Tso et al., 2016; Zahara, 2013).

Sleep problem that are not addressed will cause negative effects for preschooler. It will make preschooler experienced physically problem, cognitive problem, social problem and behavioral problem. Sleep problem was associated with lower school readiness, more hyperactivity and inattention, and pro social behavior (Tso et al., 2016).

Intervention for sleep problem is needed for solving sleep problem. There are recommendations from literature for solving that problem is preventive intervention. Effective intervention according to family center care is recommended in nursing area. Objective of this study to analyze the intervention aimed solving sleep problem in preschooler, so that will be implemented by pediatric nursing, pediatricians, and family physicians. This study was to perform a systematic review of resolving sleep problems interventions on preschool. Aspects of reviewing intervention consisting of target intervention, form and content of intervention, duration of intervention and continent of place intervention. Aspect reviewing of article is consist of design study and measured sleep problem.

Methods

A search was conducted in Google scholar database on February 2020 using keyword "Intervention and Sleep Problem and Preschool". The search did by Eka Wahyuningrum, a researcher in pediatric department who have experienced did research in sleep problem area in children. The search on the data base is researcher. Researcher using database Google scholar only, because when researcher tried to search to another database using the keyword on PubMed and Science Direct, researcher do not find articles that can answered the research question. Criteria inclusion for articles article were published in journal with English or Indonesian language, between 2011 until 2020, article with quantitative design or systematic review, title of article relevant with topic. Using that time because, the research do at 2020, so researcher use 10 years as reference. Review articles were excluded, as well as those including participants with comorbidities (hospitalization during the study, Autism or ADHD), do not include applicable intervention.

The search totaled 76.300 after applying time limit between 2011 until 2020 there were 17.100 articles. After reading the title, 22 considered possibly relevant. Of these 7 were excluded because participant with hospitalization and do not include intervention that could applying. Researcher, Eka Wahyuningrum, did data extraction and data analysis based on table.The search follow PRISMA chart (figure 1).

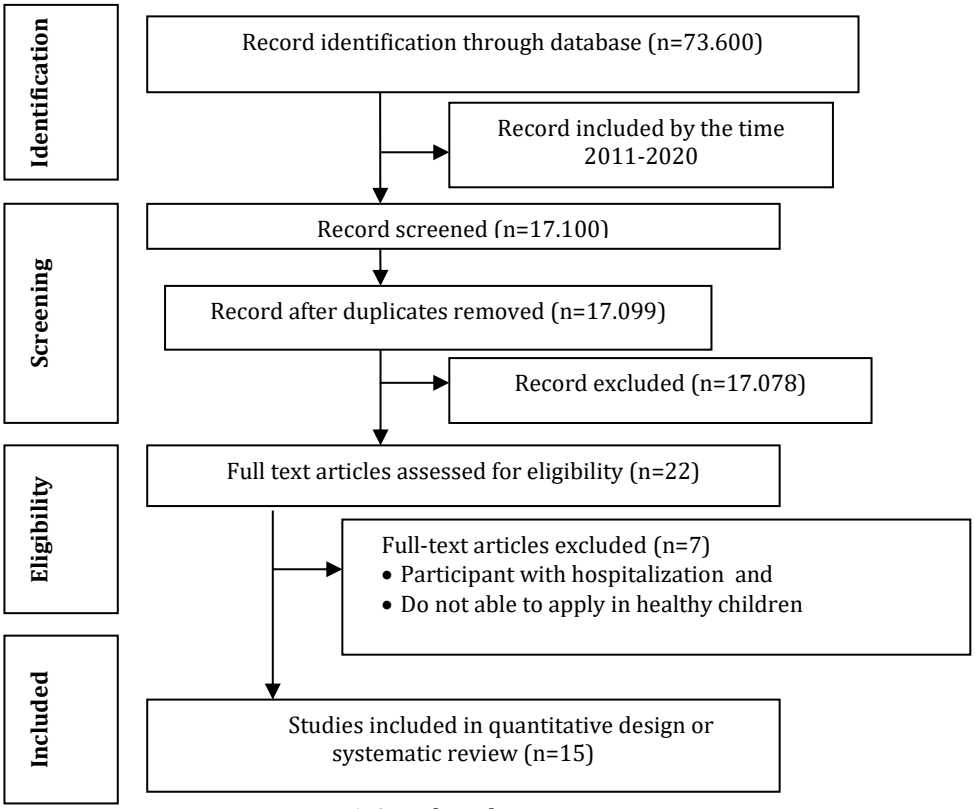

Figure 1 Article selection Process

Result

Based on the inclusion criteria and exclusion criteria, there were 15 articles. Table 1 show the data extraction.Researcher, Eka Wahyuningrum, analyzes and extracts the data by using this table.

Table 1 Summary of studies

No	Author/year of publication/ title	Objectives	Design	Sample, instrument, and place	Type of Intervention	Result and Conclusion
1	Michelle M. Garrison, (2012). The impact of a healthy media use intervention on sleep in preschool children.	To know the impact of a healthy media use on sleep in preschooler.	Rando mized controll ed trial	Sample: 565 children with aged 3-5 years old. Instruments: Children Sleep Habits Questionnaire. Place: In the Seattle metropolitan area, Washington.	Target of intervention is family. Form of the intervention is educational program, home visits and telephone follow up calls over six months.	Result: Preschoolers with educational program, home visits and telephone calls had significantly lower sleep problem. Conclusion: Healthy media use intervention had significant effect on preschoolers' sleep problems.
2	Jon Quach, (2011). A brief sleep intervention improves outcomes in the school entry	To analyzed behavioral sleep intervention in children and parent.	A random ized controll ed trial	Sample: 1512 children (parents) (age of children: 5.7 years old). Instrument for child: 1. CSHQ	Target of intervention is children. Form of the intervention is consultations about	Result: There was effect of intervention on sleep problem in children. In intervention children, sleep

No	Author/year of publication/ title	Objectives	Design	Sample, instrument, and place	Type of Intervention	Result and Conclusion
	year: A randomized controlled trial.			2. Strengths and Difficulties Questionnaire 3. Pediatric Quality of Life. 4. Wechsler Individual Achievement Test, Instrument for parents: Depression Anxiety Stress Scale-21 Place: Melbourne, Australia.	strategies of behavioral sleep for children whose screening results were suffered sleep problem.	problems more quickly solved. Conclusion: The intervention of sleep problem for children that consist of school based screening and brief behavioral sleep is feasible and has benefits.
3	Katherine E Wilson, (2014). Evaluation of a sleep education program of low-income preschool children and their families.	To analyze a novel sleep education program for low-income preschool children and their families.	Randomized trial.	Sample: 152 preschool families. Instrument: 1. Knowledge, attitudes, self-efficacy, and belief of parents. 2. Seven days sleep diaries. Place: Lansing and Detroit, Michigan.	Target of intervention is preschoolers and parents. Form of the intervention is Preschoolers received 2 weeks of classroom sleep curriculum (320 total min) and parents attended sleep education program (45 min only one time).	Result: There was a correlation between parents' knowledge, attitudes and self-efficacy. There was no relationship between parents' knowledge, attitudes and beliefs. Children showed statistical improvement in their weeknight sleep duration. Conclusion: Parents' sleep knowledge, attitudes, and self-efficacy can be improved by educational interventions in early childhood.
4	Michal Kahn, (2017). Cognitive behavioral versus non-directive therapy for preschoolers with severe nighttime fears and sleep-related problems.	To know the effectiveness of a developmentally appropriate cognitive behavioral therapy protocol for preschoolers on severe nighttime fears and sleep-related problems.	Randomized trial	Sample: 90 Children aged 4-6 years old. Instruments: 1. Structured diagnostic interviews 2. Actigrapy sleep logs 3. Parent questionnaires. Place: Tel Aviv, Israel.	Target of intervention is preschoolers (4-6 years old) and parents. Form of the intervention is Cognitive behavioral therapy.	Result: There is a significant decreased in nighttime fears, subjectively and objectively measured sleep disruptions. Conclusion: There was significantly reduction on the adverse behavioral features of nighttime fears.

No	Author/year of publication/ title	Objectives	Design	Sample, instrument, and place	Type of Intervention	Result and Conclusion
5	Sarah Blunden, (2011). Behavioral treatments to encourage solo sleeping in preschool children: An alternative to controlled crying.	To analyze behavioral treatments on sleep.	Quasi experiment	Sample: 33 families. Instrument: 1. A Family Demographic Questionnaire. 2. Behavioral insomnia of Childhood. 3. Seven days sleep diary. 4. A bedtime questionnaire. 5. A three-day diary/clinic evaluation. Place: Australia.	Target of intervention is parents. Form of the intervention is a Training of sleep methods for five weeks.	Result: There was improvement in Co sleeping and family stress: time taken until sleep onset (SOL) night time sleep; and minutes awake during the night. Conclusion: The result offer method to explore in larger studiesabout sleep training methods.
6	Angelika A Schlarb, (2012). Mini-Kiss online: An internet-based intervention program for parents of young children with sleep problems - influence on parental behavior and children's sleep.	To examine the efficacy and acceptance of Mini-KiSS Online.	Quasy experiment	Sample: 55 Children aged 8-57 months. Instruments: 1. A sleep diary, anamnesis questionnaires, 2. A child behavior checklist 3. Treatment evaluation questionnaires. Place: Germany.	Target of intervention is parents. Form of the intervention is the 6-week online treatment to parents of children suffering from psycho physiological insomnia or behavioral insomnia.	Result: There was high acceptance of Mini-KiSS Online. There was change of parental behavior strategies from dysfunctional strategies. There was decreased in the need for external help to start or maintain sleep, durationand frequencies of night waking, Conclusion: The Mini-KiSS Online is accepted and effective intervention to change behavior of parents and to decrease behavioral sleep problems.
7	Katherine E. Wilson, (2015). Sleep hygiene practices and bedtime resistance in low-income preschoolers: does temperament matter?	To examine sleep hygiene practices and bedtime resistance and tested whether associations differed by child temperament.	Quantitative study	Sample: 374 preschool children aged 3-5 years old. Instrument: 1. GTB 2. Sleep-Wake Scale 3. CSHS. 4. Child Behavior Questionnaire. Place: Michigan.	The study is observational analytic. There was no intervention.	Result: There was association between sleep hygiene, bed time resistance and children with more temperament. In children with less difficult temperament, there was no association between sleep

No	Author/year of publication/ title	Objectives	Design	Sample, instrument, and place	Type of Intervention	Result and Conclusion
						hygiene with bedtime resistance. Conclusion: Sleep hygiene have association with less bedtime resistance.
8	Janet C. Lam, (2019). Does increased consolidated nighttime sleep facilitate attentional control? a pilot study of nap restriction in preschoolers.	To understand the impact of a five days period of nap restriction on cognitive function and sleep patterns in typically developing preschooler, aged 3 to 4 years.	Pilot study	Sample: 28 preschool children aged 3-4 years old. Instrument: 1. Sleep logs. 2. Actigraphy 3. Neuropsychological test. Place: Baltimore, USA.	The study is observational analytic. There was no intervention.	Result: There was impact in attention control and nighttime sleep for no-nap children group. Conclusion: Short-term nap restriction increasing nighttime sleep and attention function.
9	Caroline HD Jones, (2012). Can a brief educational intervention improve parents' knowledge of healthy children's sleep? A pilot-test.	To test and design an educational tool to increase knowledge about sleep in children.	Quasy experiment.	Sample: 95 Parents of youngchildren (three months to twelve years). Instruments: 1. CSHQ 2. Parental sleep beliefs. 3. Sleep knowledge. Place: USA	Target of intervention is parents. Form of the intervention is education program to parents with brochure. The brochure was developed from sleep foundation recommendation. The brochure was designed to be accessible and to be visually appealing.	Result: There was effect in parents' knowledge about children's healthy sleep. Parents make positive changes in behaviorabout their child's sleeps practices. Conclusion: Simple written educational intervention was effective equipment toimprove parents' knowledge and promote healthy sleep.

No	Author/year of publication/ title	Objectives	Design	Sample, instrument, and place	Type of Intervention	Result and Conclusion
10	Renatha El Rafihi-Ferreira, (2018). Brief treatment for nighttime fears and co-sleeping problems: A randomized clinical trial.	To analyze effect of a brief combined parent-based intervention (CBT-based bibliotherapy plus doll) in nighttime fears and co-sleeping.	A randomized clinical trial.	Sample: 68 preschoolers who co-sleeping with their parents and avoided sleep alone due to frequently nighttime fears at night. Instruments: 1. Script for initial interview. 2. Sleep log. 3. Children's interview. 4. SHIPC. 5. PAS. 6. FSSIP. 7. CBCL. Place: Sao Paolo, Brazil	Target of intervention is parents. Form of the intervention is 1. Clinician trained parents for sixty minutes. 2. Clinician trained the caregiverfo rfourweek period. 3. Therapist contacts by telephone (ten to twenty minutes per week) to check interventio n progress.	Results: This study showed that the combined intervention effects nighttime fears and will be maintained for three month. Conclusion: This study recommended to use CBT based bibliotherapy plus doll for nighttime fears.
11	Jodi A. Mindell, (2015). Bedtime routines for young children: a dose-dependent association with sleep outcomes.	To analyze the associations of a bedtime routinein sleep outcomes on young children.	Quantitative study.	Sample: Mothers of 10,085 children (0-5 years old). Instruments: Brief Infant or Child Sleep Questionnaire Place: Canada, Australia-New Zealand, Japan, India, China, Hongkong, Korea, Malaysia, Philippines, United States, United Kingdom, Singapore, Thailand.	The study is observational analytic. There was no intervention.	Result: A consistent bedtime routine was associated with shorter sleep onset latency, earlier bedtimes, decreases night waking, and increased sleep duration. Conclusion: This study showed that a regular nightly bedtime routine repaired sleep in young children.
12	Scott J. Brown, (2015). Reading at bedtime associated with longer nighttime sleep in Latinopreschoolers.	To know association between reading at bedtime and sleep behaviors in Latino preschoolers.	Quantitative study	Sample: Parents of 62 children. Instruments 1. A standardized questionnaires assessing Bedtime Routines (BR), 2. Questionnaires aboutbedtime reading frequency and	The study is observational analytic. There was no intervention.	Result: 62 parents completed questionnaires. 48% parents have consistent BR and 42% parents reading at bedtime.Withoutconfounder variables, reading at bedtime has significantly relationship with

No	Author/year of publication/ title	Objectives	Design	Sample, instrument, and place	Type of Intervention	Result and Conclusion
				other variables of sleep. 3. Home surroundings and family demographics. Place: Northern San Diego County		longer total nighttime, but not with other behaviors in sleep. Conclusion: Reading at bedtime has association with total duration of nighttime.
13	Jodi A. Mindell, (2016). Sleep Well!: A Pilot study of an education campaign to improve sleep of socioeconomically disadvantaged children	To examined the efficacy of Sleep Well!	Pilot study (quantitative study)	Sample: 152 children Instruments: Sleep schedule questionnaire. Place: Philadelphia	Target of intervention is parents. Form of the intervention is sleep education about sleep hygiene. Parents will got 3 basic sleep messages: (1) have a bedtime before 9.00 PM, (2) evade all caffeine, (3) keep electronics devices out of the room.	Result: There was association between supply bed with reduced bedroom electronics. It is also associated with increased parent-reported nighttime sleep duration in children. Conclusion: Providing bed will increasing sleep duration and decreasing use of electronics at bedtime.
14	Camila S.E. Halal, (2014). Education in children's sleep hygiene: which approaches are effective? A systematic review	To analyze the interventions of sleep hygiene.	Systematic review	Sample: 10 articles were reviewed. Articles from the PubMed database, the LILACS and SciELO databases. Place: Brazil.	The study is systematic review. There was no Intervention. But there were consist of some recommendations.	Result: The techniques of sleep hygiene arecontrolled comforting and gradual extinction or sleep remodeling, positive routines. Conclusion: Behavioral approaches to sleep hygiene in children are easy to apply and adhere. Butthere were very few studies analyzed the effectiveness of the available technique.
15	Eka Wahyuningrum, (2018). Effect of Health Education of Sleep Hygiene	To analyze the effect of HESH (Health Education of	Quasy experiment.	Sample: 60 preschooler (48-72 months) Instruments	Target of intervention is parents. Form of the intervention is	Result: There was effect of HESH on preschooler sleep problems.

No	Author/year of publication/ title	Objectives	Design	Sample, instrument, and place	Type of Intervention	Result and Conclusion
	on Sleep Problems In Preschoolers	Sleep Hygiene) on sleep problems in preschooler s.		1. (CSHQ) Indonesian version. 2. Module and booklet HESH Place: Indonesia.	1. Health education using ppt and booklet HESH for 100 minutes, 2. Telephone follow up.	Conclusion: Health Education of Sleep Hygiene (HESH)could decrease sleep problem.

Discussion

Target intervention

Articles show that intervention was targeted to "parents and preschooler" or "parents (family)" or "preschooler" as subject. Two studies were targeting parents and preschooler (Kahn, Ronen, Apter, &Sadeh, 2017a; Wilson, Miller, Bonuck, Lumeng, &Chervin, 2014), Eight studies were targeting parents (families)(Blunden, 2011b; Garrison & Christakis, 2012; Jones, Owens, & Pham, 2012; Mindell, Sedmak, Boyle, Butler, & Williamson, 2016; Quach, Hiscock, Ukoumunne, & Wake, 2011; Rafihi-Ferreira, Silvares, Asbahr, &Ollendick, 2018; Schlarb&Brandhorst, 2012; Wahyuningrum, Rahmat, &Hartini, 2018) and four studies were targeting preschooler (Brown, Rhee, &Gahagan, 2015; Halal &Nunes, 2014a; Lam, Koriakin, Scharf, Mason, &Mahone, 2019; Mindell, Li, Sadeh, Kwon, & Goh, 2015; Wilson et al., 2016). Most of study did intervention to parents or family. Two study did intervention to parents and children. Three of the four study that target children were observational study(Brown et al., 2015; Halal &Nunes, 2014a; Mindell et al., 2015).

Bathory and Tomopoulos (2017) presented that healthy sleep patterns can established and sleep problems can be managed and avoidedbysleep-promoting parenting practices or good sleep hygiene (Bathory&Tomopoulos, 2017). And according to family center care approach, parent targeting in intervention is best approaches for solving sleep problem.

Form of intervention

Most of intervention that applied to parents was sleep education about sleep hygiene that delivered directly (face to face and informational brochure),indirectly (internet) (Jones et al., 2012; Mindell et al., 2016; Schlarb&Brandhorst, 2012; Wahyuningrum et al., 2018; Wilson et al., 2014), consultation (Quach et al., 2011), modification of media use (Garrison & Christakis, 2012), Cognitive Behavioral Therapy (CBT) (Kahn, Ronen, Apter, &Sadeh, 2017b), behavioral treatment (Blunden, 2011b) and combined intervention (60-min parenting session, one face-to face section and four weekly 10 to 20 min telephone follow-up) (Rafihi-Ferreira et al., 2018).

Intervention for Children consist of Cognitive Behavioral Therapy (CBT) (Kahn et al., 2017b), behavioral treatment like sleep hygiene practices, nap restriction, consistent bedtime routine and reading at bedtime (Brown et al., 2015; Halal &Nunes, 2014a; Lam et al., 2019; Mindell et al., 2015; Wilson et al., 2015).The result of the study explained in light of the emphasis that was given to behavioral components in CBT-PIP. Reducing parental involvement and co-sleeping at nighttime was defined as one of the main therapeutic goals in this intervention. Children in this group practiced exposure to their feared stimuli (eg, being alone in bed at night), so that they could gradually learn to manage their fears and sleep soundly without the help of others. (Kahn et al., 2017b). It is recommended to do intervention for sleep problem by involved parents, because some of that intervention is to change behavioral of children.

Duration of intervention

Duration of intervention is duration for finishing intervention until giving effect on sleep problem. Duration of intervention depends on form, content of intervention and kind of sleep problem. There are two studies need more than 6 months to finish intervention (Garrison & Christakis, 2012; Quach et al., 2011). The intervention of the study was modified media use and telephone follow up and the other was consultation that covered behavioral sleep strategies for children through parents.

Four studies need 1-3 month (Blunden, 2011b; Rafihi-Ferreira et al., 2018; Schlarb&Brandhorst, 2012; Wahyuningrum et al., 2018). Intervention that applied in this study were training for teaches parents, CBT, Mini-Kiss online and Sleep hygiene education.

Five studies need less than 1 month (Jones et al., 2012; Kahn et al., 2017b; Lam et al., 2019; Mindell et al., 2016; Wilson et al., 2014). Intervention in this study like restriction nap for increasing nighttime sleep, CBT-PIP for reducing nighttime fear, short informational brochure for increasing parents knowledge and promote healthy sleep behavior in children, sleep education for reducing bedroom electronic and improving sleep duration and sleep education program for parents and children for improve parent's sleep knowledge, attitudes and self-efficacy and sleep behavior in children.

Several studies cannot identified duration because design of study. This study did not using intervention directly, but the result could be considered for being intervention that promote healthy sleep. The recommendation interventions are consistent bedtime routine and sleep hygiene. (Brown et al., 2015; Halal &Nunes, 2014a; Mindell et al., 2015; Wilson et al., 2015).

Continent of place intervention.

These studies from some continent in the World. Seven studies were from continent of North America (Brown et al., 2015; Garrison & Christakis, 2012; Jones et al., 2012; Lam et al., 2019; Mindell et al., 2016; Wilson et al., 2015, 2014), two studies were from continent of South America (Halal &Nunes, 2014a; Rafihi-Ferreira et al., 2018), two studies were from continent of Australia (Blunden, 2011b; Quach et al., 2011), one studies was from continent of Europe (Schlarb&Brandhorst, 2012) and one studies were from continent of Asia (Kahn et al., 2017b; Wahyuningrum et al., 2018). One study was applied in some continent (Asia, Australian and North America) (Mindell et al., 2015). Most studies were applied in continent of North America. It will be consideration to do research about that intervention to solve sleep problem in children to another country.

Design of studies

Most of study design was randomized control trial. There were six from fifteen studies using randomized control trial design. (Garrison & Christakis, 2012; Kahn et al., 2017a; Lam et al., 2019; Quach et al., 2011; Rafihi-Ferreira et al., 2018; Wilson et al., 2014). Five study were quasi experiment (Blunden, 2011a; Jones et al., 2012; Mindell et al., 2016; Schlarb&Brandhorst, 2012; Wahyuningrum et al., 2018), three studies were observational study (Brown et al., 2015; Mindell et al., 2015; Wilson et al., 2015) and one study was systematic review (Halal &Nunes, 2014b).

Kinds of sleep problem

The International Classification of Sleep Disorders has classified eighty four different types of sleep problems into four categories (dyssomnias, parasomnias, sleep disorders associated with psychiatric disorders, and sleep disorders associated with medical disorders)(Touchette, 2011). Kind of sleep problem that measured in this studies was sleep onset delay (Garrison & Christakis, 2012), sleep difficulties (Quach et al., 2011; Wahyuningrum et al., 2018), weeknight sleep duration (Lam et al., 2019; Wilson et al., 2014), nighttime fears (Kahn et al., 2017a), sleep duration, sleep onset delay, awake during the night (Blunden, 2011a), behavioral sleep problem (Schlarb&Brandhorst, 2012), bedtime resistance (Wilson et al., 2015), nighttime fears and co-sleeping problems (Rafihi-Ferreira et al., 2018), bedtime resistance, duration of sleep, sleep onset

latency and night wakings(Mindell et al., 2015), sleep duration (Brown et al., 2015), bedroom electronic and sleep duration (Mindell et al., 2016) One of study was promote increasing parent knowledge about healthy sleep (Jones et al., 2012)

Conclusion

Eight studies were targeting parents, two studies were targeting parents and preschooler and four studies were targeting preschooler. Most of intervention that applied to parents was sleep education about sleep hygiene that delivered directly, indirectly (internet), consultation, and modification of media use, Cognitive Behavioral Therapy (CBT), behavioral treatment and combined intervention. Duration of intervention is varies, most of study need time less than 1 month (four study). Seven studies were from continent of North America. Each of South America continent, Asia continent and Australia continent was conducted two studies. One study was from Europe continent and there was no study from Africa continent and Antarctica continent. About design of study, there were six from fifteen studies using randomized control trial design.

Sleep education about sleep hygiene for parents is recommended intervention to solve sleep problem according to family center care. There were limited studies targeting parents and children directly, particularly in Asia Continent, so intervention study for sleep problem is recommended.

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