Maternal Adaptation of Working Mothers with Infants or Toddlers in South Korea: A Systematic Review

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Abstract

Background: The fertility rate in South Korea has been decreasing dramatically, as working women postpone or avoid childbirth due to the challenges of maintaining a career while raising a family. Working mothers with infants or toddlers have unique maternal adaptation needs, which must be understood in order to support their needs during childbearing years. Supporting successful maternal adaptation of working mothers is not only essential for each individual new working mother, but also benefits her family, her workplace, and the country.

Methods: A systematic review was conducted to describe the current state of the science on maternal adaptation of working mothers with infants or toddlers in South Korea. Eligible studies, published between 2009 and 2018, were identified by searching electronic databases. Quantitative studies related to the maternal adaptation of Korean working mothers who had a child younger than age 3 years were included. Thirty-eight articles met the inclusion criteria for narrative analysis and synthesis.

Results: Studies were classified into four major groups by maternal adaptation categories as psychological, behavioral, relational, and cognitive adaptation. The majority of studies were focused on working mothers' psychological adaptation (n=37, 97.4%), followed by behavioral (n=11, 28.9%), relational (n=9, 23.7%), and cognitive (n=3, 7.9%) adaptation. We found that the maternal adaptation of working mothers was intimately influenced by diverse variables of their community, spousal and familial support, personal attributes, and job-related characteristics.

Conclusions: These findings demonstrate the importance of understanding variable aspects of maternal adaptation of working mothers with infants or toddlers. The complexity of working mothers' needs at the individual, family, and community levels must be considered in order to develop effective intervention programs and public policy for supporting maternal adaptation in Korea.

Background

The employment rate of Korean married women has increased from 49.8% in 2008 to 57.0% in 2019 [1]. The data show that women's employment status usually rises in their early twenties and then rapidly declines in their late twenties after marriage and childbirth, reflecting the disruption in women's careers after childbirth [2]. In recent years, more women of childbearing age have chosen to focus on careers, rather than childbearing. According to Korean national statistics, the total fertility rate (the average number of births that a woman is expected to give in her fertility period) was the highest in the 1960s at 6.0, and then dramatically declined to 2.1 in the 1980s. In 2019, Korea saw the lowest birth rate on record at 0.92 [3]. Although declining fertility rate is a global phenomenon, this drastic change in Korea's fertility rate occurred over a relatively short period of time, especially compared to European countries, which took over a century to see such declines. The rapid drop in birth rates has had an enormous economic and social impact on Korean society, including a declining labor force and rapidly aging population [4]. The country has been struggling to overcome the negative impacts of low birth rates through a multifaceted approach, including interventions to support married and pregnant women during the past decade [5]. However, as employment rates of women continue to rise, the strategies to support women in both career development and childbearing need to be
reexamined. These maternal adaptation interventions for working mothers must be both practical and realistic, supporting women's need to balance both work and family life. Supporting successful maternal adaptation of working mothers is not only essential for each individual new working mother, but also benefits her family, her workplace, and the country.

The process of maternal adaptation when woman becomes a mother is described in the literature as very challenging and complicated process [6, 7]. Previous studies have demonstrated that working mothers suffer significantly more difficulties in maternal adaptation than non-employed mothers [8]. This is “double trouble” for working women, who have parenting stress at home adjusting to family life with a new child, as well as job stress from the workplace [A13]. In particular, in the early stage after childbirth (within 36 months after giving birth), the load of the working mother with infants or toddlers increases, and the burden of maternal adaptation is expected to be greater [7].

Maternal adaptation is conceptualized as a series of processes or outcomes to internalize the diverse tasks of motherhood [9]. As defined in the studies we examined, maternal adaptation includes various types of adaptations as a mother or parent, which are (1) psychological aspect (emotional condition of managing feeling aroused by childcare difficulty and preserving emotional balance), (2) relational aspect (interpersonal adjusting state with partner, child, and parenting supporters), (3) behavioral aspect (performance of childcare behavior), and (4) cognitive aspect (perception regarding parenting or consequences of parenting) [10–12].

To promote successful maternal adaptation of the working mothers with children under 36 months, systematic evidence is necessary to develop a tailored nursing intervention program. Thus, the purpose of this systematic literature review is to summarize the current state of the science on maternal adaptation for working mothers with infants or young toddlers in Korea, and to analyze various influencing factors of maternal adaptation.

Methods

Study design

The present study was a systematic review to describe the current state of the science on maternal adaptation of working mothers with infants or toddlers in Korea.

Inclusion criteria

In order to select eligible studies for this review, Population, Intervention, Comparator, Outcomes, and types of Studies (PICOS) were defined. Studies published in the last 10 years (2009–2018) were included if they met the following criteria: (a) population was Korean primiparous or multiparous working women at least 19 years old who gave birth within the last 36 months, (b) studies included any variables in relation to the psychological, relational, behavioral, or cognitive maternal adaptation, and (c) the study design was observational or intervention. Articles were excluded from the review if (a) the studies focused on medical treatment, (b) the primary caregivers were grandparents or fathers, and (c) the studies used qualitative design.
Search strategy

We searched for articles through the international electronic databases of PubMed and Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Korean electronic databases of Research Information Sharing Service (RISS), Korean-studies Information Service System (KISS), and KoreaMed. We searched the literature using various combinations of Medical Subject Headings (MeSH) terms and/or related keywords covering main search topic/area of maternal adaptation. The keywords included mothers, married women, employment, working mothers, working women, various terms to capture maternal adaptation (maternal identity, maternal role, maternal attachment, maternal behavior, maternal experience, maternal sensitivity, etc.), and Korea.

Data selection and quality appraisal

Two review authors independently screened titles and abstracts of all studies obtained from the literature search for inclusion in the review, and created a short list of potentially relevant papers. The full text was retrieved if there was any doubt about whether a study should be included in the review. The methodological quality of the articles was first evaluated independently using Joanna Briggs Institute (JBI)’s Critical Appraisal Checklist by two of the authors [13]. The JBI checklist items on the critical appraisal for observational studies included 5 items regarding research question and design, sampling, instrument, analysis, and presentation of results. Each item was evaluated with either yes or no. When the total count of yes in the critical appraisal checklist of each study was more than half, the study was included for further evaluation. After discussion, there was complete agreement between the two review authors on the methodological quality of each study. Among 38 studies, all were included in the review after critical appraisal (Table 1).
## Table 1
Quality assessment of selected studies (N = 38)

| Authors [Study ID#] | Item number of critical appraisal | Total score |
|---------------------|----------------------------------|-------------|
|                     | 1  | 2  | 3  | 4  | 5  |             |
| Kim [A1]            | 0  | 1  | 1  | 1  | 1  | 4           |
| Park et al. [A2]    | 0  | 1  | 1  | 1  | 1  | 4           |
| Lim [A3]            | 0  | 1  | 1  | 1  | 1  | 4           |
| Lee [A4]            | 1  | 1  | 1  | 1  | 1  | 5           |
| Kim [A5]            | 0  | 1  | 1  | 1  | 1  | 4           |
| Yang & Moon [A6]    | 0  | 1  | 1  | 1  | 1  | 4           |
| Kim [A7]            | 0  | 1  | 1  | 0  | 1  | 3           |
| Kim [A8]            | 0  | 1  | 1  | 1  | 1  | 4           |
| Yang & Choi [A9]    | 0  | 1  | 1  | 1  | 1  | 4           |
| Sung & Park [A10]   | 0  | 1  | 1  | 1  | 1  | 4           |
| Kim & Han [A11]     | 0  | 1  | 1  | 1  | 1  | 4           |
| Park & Moon [A12]   | 0  | 1  | 1  | 1  | 1  | 4           |
| Son [A13]           | 1  | 1  | 1  | 1  | 1  | 5           |
| Lim, Choi & Lee [A14]| 1  | 1  | 1  | 1  | 1  | 5           |
| Lee [A15]           | 0  | 1  | 1  | 1  | 1  | 4           |
| Cho & Park [A16]    | 1  | 1  | 1  | 0  | 1  | 4           |
| Joo [A17]           | 0  | 1  | 1  | 1  | 1  | 4           |
| Heo & Kim [A18]     | 0  | 1  | 1  | 1  | 1  | 4           |
| Kim [A19]           | 0  | 1  | 1  | 1  | 1  | 4           |
| Lee & Chin [A20]    | 1  | 1  | 1  | 1  | 1  | 5           |
| Keum & Kim [A21]    | 1  | 1  | 1  | 0  | 1  | 4           |
| Kim & Kwon [A22]    | 0  | 1  | 1  | 0  | 1  | 3           |
| Kim [A23]           | 1  | 1  | 1  | 1  | 1  | 5           |
| Park [A24]          | 0  | 1  | 1  | 1  | 1  | 4           |
| Song, Lee & Chun [A25]| 1  | 1  | 1  | 1  | 1  | 5           |
| Lee [A26]           | 0  | 1  | 1  | 1  | 1  | 4           |
| Lee [A27]           | 0  | 1  | 1  | 0  | 1  | 3           |
| Authors [Study ID#]          | Item number of critical appraisal | Total score |
|-----------------------------|----------------------------------|-------------|
|                             | 1 2 3 4 5                        |             |
| Lee [A28]                   | 0 1 1 0 1                        | 3           |
| Choi [A29]                  | 0 1 1 0 1                        | 3           |
| Jeong & Jeon [A30]          | 0 1 1 1 1                        | 4           |
| Ko [A31]                    | 0 1 1 0 1                        | 3           |
| Kim & Kim [A32]             | 0 1 1 1 1                        | 4           |
| Kim & Lee [A33]             | 0 1 1 1 1                        | 4           |
| Yoon & Shin [A34]           | 1 1 1 1 1                        | 5           |
| Choi [A35]                  | 0 1 1 1 1                        | 4           |
| Kim [A36]                   | 0 1 1 0 1                        | 3           |
| Choi & Jahng [A37]          | 0 1 1 1 1                        | 4           |
| Kim & Cho [A38]             | 0 1 1 1 1                        | 4           |

**Data extraction and analysis**

In order to summarize the results of the selected studies, we designed a data extraction form, which included all major components of each study. For eligible studies, two review authors independently extracted the data using the data extraction form. Author(s), study design, theoretical framework, sample, data collection setting, variables, and key findings were extracted and summarized in the form for further analysis and synthesis.

We performed a narrative synthesis of selected studies’ findings. We classified the major domains of maternal adaptation in the primary studies, and analyzed and deducted conclusions in the systematic review. Then, we derived a path diagram based on the selected regression studies (n = 30), which presented relationships among major concepts regarding maternal adaptation and related issues. We adopted Bronfenbrenner’s ecological systems theory (1979) as the classification criterion for maternal adaptation and diverse related factors from selected studies (Fig. 1). The ecological framework for human development in ecological systems theory explains that an individual’s development is influenced by not only individual (intrapersonal) layers but also each nested layer (i.e., microsystem and exosystem) but interconnected structures [14]. The authors worked together both independently and in collaboration in order to come to a consensus on the classification of the domains and conclusions.

**Results**

**Description of studies**
Among 50,540 publications, 38 quantitative studies published between 2009 and 2018 met the inclusion criteria and were selected for the systematic review (Fig. 2).

Thirty-eight observational studies were included. There was no study to use or adopt the theoretical framework in the study. The most frequent data collection sites were child-care centers (n = 22, 57.9%). Maternal adaptation was categorized into 4 domains; psychological (n = 37, 97.4%), behavioral (n = 11, 28.9%), relational (n = 9, 23.7%), and cognitive (n = 3, 7.9%) adaptation. Some studies were included in both categories since they dealt with both adaptation domains (Table 2).
| Variables                        | Category                        | n (%) | Study ID#                          |
|---------------------------------|---------------------------------|-------|-----------------------------------|
| Publication year                 | 2009 ~ 2013                     | 20(52.6) |                                   |
|                                 | 2014 ~ 2018                     | 18(47.4) |                                   |
| Research design                  | Observational study             | 38(100.0) |                                   |
| Theoretical framework use        | No                              | 38(100.0) |                                   |
| Setting of data collection       | Child-care center               | 22(57.9)  |                                   |
|                                 | Panel study on Korean children  | 7(18.4)   |                                   |
|                                 | Others                          | 9(23.7)   |                                   |
| Maternal adaptation             | Psychological domain (n = 37, 97.4%) |       |                                   |
|                                 | Parenting stress                | 27(71.1)  | 1~3, 5~7, 12~16, 20~27, 31~38     |
|                                 | Parenting guilt                 | 6(15.8)   | 10~12, 17, 19, 30                 |
|                                 | Parenting competency            | 5(13.2)   | 8~10, 18, 27                      |
|                                 | Psychological distress          | 3(7.9)    | 9, 24, 26                         |
|                                 | Depression                      | 3(7.9)    | 28, 29, 31                        |
|                                 | Maternal anxiety                | 2(5.3)    | 6, 11                             |
|                                 | Behavioral domain (n = 11, 28.9%) |         |                                   |
|                                 | Parenting style                 | 5(13.2)   | 10, 13, 14, 17, 26                |
|                                 | Parenting behavior              | 5(13.2)   | 4, 11, 12, 19, 28                 |
|                                 |                                  | 3(7.9)    |                                   |
|                                 | Parenting attitude              | 13, 14, 29 |                                   |
|                                 | Relational domain (n = 9, 23.7%) |         |                                   |
|                                 | Marital satisfaction            | 6(15.8)   | 13, 16, 21, 24, 32, 33            |
|                                 | Parental satisfaction           | 4(10.5)   | 8, 10, 33, 36                     |
| Variables | Category | n (%) | Study ID# |
|-----------|----------|-------|-----------|
| Cognitive domain | Intention for subsequent childbirths | 3 (7.9) | 7, 35, 37 |
| Intrapersonal factors | Mother-related factors | | |
| Psychological | General self-efficacy | 2 (5.3) | 13, 16 |
| Life satisfaction | 1 (2.6) | 8 |
| Physical | Sleeping problem | 1 (2.6) | 24 |
| Job-related factors | Work-family conflict | 4 (10.5) | 5, 22, 36, 29 |
| Job satisfaction | 3 (7.9) | 21, 35, 37 |
| Attitude of occupation | 1 (2.6) | 6 |
| Family-related factors | Child-related factors | | |
| Child temperament | 3 (7.9) | 13, 15, 27 |
| Spouse-related factors | Spousal support | 9 (23.7) | 5, 7, 13, 15, 16, 19, 21, 23, 32 |
| Community related factors | Social support | Social support | 11 (28.9) | 7, 10, 13, 15, 16, 20, 23, 27, 31, 34, 36 |
| Work-related environment | Employment status | 7 (18.4) | 10, 11, 23, 24, 28, 33, 34 |
| Job characteristics | 2 (5.3) | 4, 24 |
| Work-family culture | 1 (2.6) | 30 |
| Work environment | 1 (2.6) | 5 |

Regarding variables in each domain, parenting stress (n = 27, 71.1%), parenting guilt (n = 6, 15.8%), parenting competency (n = 5, 13.2%), psychological distress depression (n = 3, 7.9%), and maternal anxiety (n = 2, 5.3%) were measured for psychological adaptation. Parenting style (n = 5, 13.2%), parenting behavior (n = 5, 13.2%), and parenting attitude (n = 3, 7.9%) were considered for behavioral adaptation. Marital satisfaction (n = 6, 15.8%) and parental satisfaction (n = 4, 10.5%) were evaluated for relational adaptation, and intention for subsequent childbirths (n = 3, 7.9%) was measured for cognitive adaptation (Table 2).

**Maternal adaptation and related factors**

Maternal adaptation can be categorized by 4 domains (psychological, relational, behavioral, and cognitive adaptation). Figure 3 shows how we propose these domains fit into the ecological systems framework [14]. Each domain is influenced by each nested layer of intrapersonal (mother-related and job-related) layer, microsystem (family) layer, and exosystem (community) layer, and they are also interconnected each other.
Psychological adaptation

Most (37/38) studies investigated psychological adaptation of working mothers. The measured variables included parenting stress, parenting guilt, parenting competency, psychological distress, depression, and maternal anxiety. Many studies found that working mothers’ psychological adaptation was significantly affected by diverse mother-specific factors such as self-efficacy and sleeping problems [A13, A24], job-related factors such as attitude for occupation in the intrapersonal level [A6, A13], child-related factors such as child temperament [A13, A27, A31], spouse-related factors such as spousal support in the family level [A5, A16, A21, A23], social support [A16, A20, A23, A27, A31], and work-related environment such as work-family culture, employment status and job characteristics at the community level [A5, A6, A11, A17, A24, A26, A28, A29, A30].

Behavioral adaptation

Eleven studies dealt with behavioral adaptation of working mothers. The variables included parenting behavior, parenting style, and parenting attitude. Working mothers’ behavioral adaptation was significantly affected by psychological adaptation such as parenting stress [A10, A14, A28]. Also, behavioral adaptation was affected by work-related environments such as job characteristics, employment status, and work-family culture at the community level [A4, A10, A12, A29]. Diverse work-related environmental factors such as flexible working hour benefit in workplace, paid sick vacation days, fewer working hours, and work-family spillover affected parenting behavior and parenting attitude.

Relational adaptation

Nine studies identified relational adaptation of working mothers. The measured variables included marital satisfaction and parental satisfaction. Working mothers’ relational adaptation was significantly affected by mother-related factors at the interpersonal level [A24], spouse-related factors such as spousal support at the family level [A16], social support [A16] and work-related environment at the community level [A8]. For example, mothers’ sleeping problems affected marital satisfaction (relational adaptation) [A24], and parental role satisfaction (relational adaptation) was affected by their individual life satisfaction [A8].

Cognitive adaptation

Three studies presented working mothers’ cognitive adaptation. As cognitive adaptation is the perception regarding parenting or consequences of parenting, successful maternal adaption of working women is associated with positive feelings about subsequent childbirths. For this reason, intention for subsequent childbirths was measured as an indicator of cognitive adaptation in three studies. Working mothers’ job-related factors [A35, A37] and family-related factor (partner’s help) and social support [A7] significantly affected working mothers’ intention for subsequent childbirths.

Discussion

The goal of this systematic review was to summarize and synthesize the research findings on maternal adaptation of Korean working mothers with infants or toddlers. In this review, we selected 38 studies, classified maternal adaptation into 4 domains of psychological, relational, behavioral, and cognitive
adaptation, and presented these related factors of maternal adaptation using the ecological systems framework [14].

Working mothers with their infants or toddlers can experience dual difficulties of fulfilling their roles as mothers (maternal adaptation), but also as an employee in the workplace [A5, A22, A29, A36]. In addition, we found that their adaptation to these two competing demands are complexly interrelated in this review. The complexity of working mothers’ needs at the individual, family, and community levels must be considered in order to develop effective intervention programs for improving maternal adaptation in Korea.

Among a total of 38 quantitative studies in this review, there were no experimental studies or studies based on the theoretical frameworks. In order to overcome the current low birth rate in Korea, intervention studies focused on supporting maternal adaptation amongst working mothers are needed. These studies must have a robust theoretical foundation that can help make sense of the multiple inter-related and complex factors impacting maternal adaptation in this group [15]. Meleis’ Transitions Theory [16], Mercer’s Maternal Role Attainment Theory [17], and Roy’s Adaptation Theory [18] may be useful in studying maternal adaptation in this population. Further, ecological systems theory is a useful theoretical framework to explain or enhance our understanding of maternal adaptation, because maternal adaptation can be affected by various factors in the nested layers of the ecological model [19]. In the process of maternal adaptation, the early stage after childbirth is a very sensitive and critical period for the new mothers [9]. Studies conducted during this critical window will allow researchers to detect conflicts or difficulties in maternal adaptation early and provide more practical interventions for working mothers with young children under 36 months old [20].

Most studies in this review dealt with the domain of psychological adaptation of working mothers, followed by behavioral, relational, and cognitive adaptation. In addition, psychological adaptation was measured by parenting stress, parenting guilt, parenting competency, psychological distress, depression, and maternal anxiety. Parenting stress is widely recognized as the most useful for measuring maternal adaptation of working mothers, as fulfilling parenting roles is accompanied by some level of stress for working mothers [21]. Also, based on our results, psychological adaptation is impacted by diverse mother-related factors (e.g., self-efficacy), job-related factors (e.g., attitude for occupation), child-related factors (e.g., child temperament), spouse-related factors (e.g., spousal support), social support, and work-related environments (e.g., work-family culture). Therefore, one focus area for nursing interventions should be reduction in parenting stress, parenting guilt, psychological distress, depression, and maternal anxiety of working mothers, considering various influencing and inter-related factors suggested within this review.

In regard to behavioral adaptation, the current body of literature is focused on parenting behavior, parenting style, and parenting attitude. The behavioral adaptation of working mothers was impacted by various work-related environments (e.g., employment status and work-family culture) and even psychological adaptation such as parenting stress [A35, A37] in this review. The impact of parenting style on a child’s development has also been examined [22]. Future intervention studies focused on parenting style and parenting behavior amongst working Korean mothers should consider the relationships among the complex variables presented in this review, rather than single factors. Also, this review demonstrates that many aspects of the work environments, such as flexible work hours, paid sick leave, paid vacation days, and so on directly affected the
mothers’ behavioral adaptation. Therefore, community-level efforts and strategies for improvement of such work-related environmental factors are necessary.

Relational adaptation included both marital satisfaction and parental satisfaction. Relational adaptation, such as marital satisfaction, is one of the best indicators of maternal adaptation and affected by spousal and social support [A16]. Social or spousal support for mothers is helpful to reduce parenting stress and the negative impact on the maternal role by providing emotional and practical support for mothers [A13]. In particular, spousal support is well known to have a significant impact on mothers’ adaptation and parenting [A5, A16, A21, A23]. Spousal support reduces the burden on the mothers’ child rearing and cause the mother herself to be positively aware of the parenting [23]. Therefore, promoting spousal support and participation in child rearing should be an important strategy in any maternal adaptation intervention, which should include both parents. In addition, it is essential to involve other social support resources, beyond the modern nuclear family. A realistic and systematic social support system should be established by the Korean government to support families where both parents work.

Lastly, as successful maternal adaption of working women is associated with positive perceptions about subsequent childbirths, intention for subsequent childbirths was one of the indicators of cognitive maternal adaptation. Promoting a positive/successful maternal transition experience for working mothers is not only beneficial for the mother/family’s health, but may also increase her willingness to give a birth to subsequent children and further contribute to overcoming the historically low birthrate in Korea. Therefore, a tailored intervention program to reduce the ‘double trouble’ working mothers face through improving spousal support at the family level and preparing various strategies for social support or work environmental management in the community level will be essential. At the same time, a qualitative study to explore the changes in cognition related to maternal values and the role of family in Korean society will provide additional direction for future maternal adaptation promotion interventional studies.

This review is limited to working Korean mothers, thus we suggest future studies to examine the diverse aspects of maternal adaptation and related factors in other populations. In addition, this review only examined maternal adaptation in working mothers, so future study is needed to compare the differences in the maternal adaptation process between working mothers and non-employed mothers.

Conclusions

This study summarized various research studies on maternal adaptation of working mothers with infants or toddlers in Korea through a systematic literature review. In this review, maternal adaptation was classified into 4 domains: (1) psychological, (2) behavioral, (3) relational, and (4) cognitive adaptation. The relationships among these domains were presented in detail using the ecological framework. This systematic review provides important evidence for researchers, clinicians and policy makers, seeking to design effective maternal adaptation interventions and support working Korean women in their childbearing years.

List Of Abbreviations
CINAHL stands for Cumulative Index to Nursing and Allied Health Literature
RISS stands for Research Information Sharing Service
KISS stands for Korean-studies Information Service System
MeSH stands for Medical Subject Headings
JBI stands for Joanna Briggs Institute

Declarations

Ethics approval and consent to participate
Ethics approval was not needed for this systematic literature review.

Consent for publication
Not applicable.

Availability of data and materials
The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests
The authors declare that they have no competing interests.

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Authors’ contributions
AJA, REH, and SJE made substantial contributions to conception and design of the study. AJA, REH, LJH, and SJE conducted and revised the literature search, assessed the studies for quality, extracted, analyzed and interpreted the data. All authors (AJA, REH, TK, LJH, and SJE) have participated in writing and revising the manuscript as well as approving the final manuscript. SJE coordinated the systematic review process and received the research grant.

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Figures

![Exosystem: Community](chart)

**Exosystem: Community**

- Social support
  - Child temperament
- Work-related environment
  - Work environment
  - Employment status
  - Work-family culture
  - Job characteristics

**Microsystem: Family**

- Child-related factor
  - Spousal support
- Spouse-related factor
  - Spousal support

**Individual: Intrapersonal**

- Mother-related factor
  - Psychological factor
    - General self-efficacy
    - Life satisfaction
  - Physical factor
    - Sleeping problem
- Job-related factor
  - Job satisfaction
  - Attitude for occupation
  - Work-family conflict

**Outcome: Maternal adaptation**

- Psychological
  - Parenting stress
  - Parenting guilt
  - Psychological distress
  - Parenting competency
  - Maternal anxiety
  - Depression
- Relational
  - Marital satisfaction
  - Parental satisfaction
- Behavioral
  - Parenting behavior
  - Parenting style
  - Parenting attitude
- Cognitive
  - Intention for subsequent childbirths

Figure 1
We classified the major domains of maternal adaptation in the primary studies, and analyzed and deducted conclusions in the systematic review. Then, we derived a path diagram based on the selected regression studies (n = 30), which presented relationships among major concepts regarding maternal adaptation and related issues. We adopted Bronfenbrenner’s ecological systems theory (1979) as the classification criterion for maternal adaptation and diverse related factors from selected studies (Fig. 1). The ecological framework for human development in ecological systems theory explains that an individual’s development is influenced by not only individual (intrapersonal) layers but also each nested layer (i.e., microsystem and exosystem) but interconnected structures [14].
Among 50,540 publications, 38 quantitative studies published between 2009 and 2018 met the inclusion criteria and were selected for the systematic review (Fig. 2).

Maternal adaptation can be categorized by 4 domains (psychological, relational, behavioral, and cognitive adaptation). Figure 3 shows how we propose these domains fit into the ecological systems framework [14]. Each domain is influenced by each nested layer of intrapersonal (mother-related and job-related) layer, microsystem (family) layer, and exosystem (community) layer, and they are also interconnected each other. Kim [A7], Lee [A4], Sung & Park [A10], Park & Moon [A12], Choi [A29]. Cho & Park [A16]. Cho & Park [A16], Lee & Chin [A20], Kim [A23], Lee [A27], Ko [A31]. Kim & Kim [A32]. Lee [A4], Kim [A8]. Kim [A5], Yang & Moon [A6], Kim & Han [A11], Joo [A17], Park [A24], Lee [A28], Choi [A29], Jeong & Jeon [A30]. Lim [A3], Son [A13], Lee [A27], Ko [A31]. Kim [A5], Cho & Park [A16], Keum & Kim [A21], Kim [A23]. Keum & Kim [A21], Kim [A8]. Park [A24]. Son [A13], Park [A24], Song, Lee & Chun [A25]. Kim & Kwon [A22], Kim [A36]. Kim [A5], Yang & Moon [A6], Kim & Kwon [A22]. Choi [A35], Choi & Jahng [A37]. Lee [A15], Kim & Kwon [A22]. Keum & Kim [A21], Kim & Kim [A32], Kim & Lee [A33], Kim [A36]. Yang & Moon [A6], Son [A13]. Sung & Park [A10], Lim, Choi & Lee [A14], Lee [A28]. Kim [A7], Choi [A35], Choi & Jahng [A37].

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