Introduction

Along with advances in medical technology and increase in average life expectancy, the elderly population has grown substantially. Koreans' life expectancy was 77.2 years for men and 84.1 years for women in 2010, about 7 years longer in women than in men. Health-adjusted life expectancy (HALE) of Koreans is 71 years. Comparing with other Organization for Economic Co-operation and Development (OECD) countries, the average life expectancy is longer in the elderly in Korea, but HALE is shorter than the OECD averages. Women with longer average life expectancy, in particular, are forecasted to have low quality of elderly life for about 14 years, about twice as longer than men, compared to HALE. Since middle age in women is the period of experiencing menopause, various life events, stress, and physical and psychological fatigue, consideration must be made for their health status. Moreover, middle-aged women have burdens of facing a variety of life events including preparing for elderly life, children's educational attainment and marriage, spouse's or their own retirement, parent's death and others.

A sharp increase in dual-income families has led grandmothers to occupy a role of providing child-rearing support services for their grandchildren. According to Rho, the largest percentage of 47.2% of working mothers with a child aged less than 12 months ask grandparents to assist raising their grandchildren. The younger the child, parents have a tendency to prefer childcare by their own family members or private childcare workers in private homes. Grandmother's assistance is an important factor influencing fertility in working mothers, Since women have become primarily...
responsible for childcare in the home, grandmothers have assumed this responsibility helping to raise their daughter's children. Various factors act on the quality of life of grandmothers raising grandchildren. Of these factors, perceived health, childcare stress, and social status mainly influence their quality of life. Elderly women involved in grandchild care are found to experience health deterioration and risk, leading to health problems such as chronic fatigue. Moreover, grandchild care is linked to lower life satisfaction as insufficient time and financial resources and physical health problems deteriorate psychological health.

Women who reached menopause, in particular, experience various physical and mental symptoms, and are exposed to higher risk of osteoporosis, cardiovascular disease, obesity, or musculoskeletal and joint related problems. Furthermore, since hormonal changes can result in psychological weakness, physical and psychological adaptation have to be made adequately in post-middle-age women. Improper adaptation to these changes may lead to mental problems such as depression, in addition to physical problems.

Therefore, it is crucial to understand what physical and mental effects are associated in grandmothers raising grandchildren, and to identify measures to preserve family and social supports.

**Body**

1. Factors affecting childcare stress

Family caregivers' stress can have a negative impact on both themselves and children. Moreover, the stress may increase risk for child abuse and neglect, and influence child development directly or indirectly.9

1) Health state

Park and Jung10 addressed that childcare stress was higher in grandmothers with moderate health state than those with good health state. On the other hand, a previous study reported that perceived health state and problems of grandmothers were not the cause of childcare stress.11 Health problems can occur in grandmothers due to physical degradation, and caring grandchildren can impose physical, social and mental burdens such as increased fatigue, no spare time to take care of their own health, reduced private time, difficulty in going out and others.12 However, grandmothers help to raise grandchildren in infancy and childhood regardless of their health state because responsibility for caregiving has been transferred to grandmothers throughout the society.13 Health state is the most influential factor determining life satisfaction among grandmothers raising grandchildren, and a good health is the basic need in performing caregiver role more actively for the wholesome growth and development of grandchildren.14

2) Tendency

The higher the sociality, the lower the childcare stress in grandmothers. The higher the activity and emotionality between a grandmother and a grandchild, the higher the stress level.10 Emotionality is characterized by emotional sensitivity. A mother with a high emotionality state is more likely to perceive a higher level of stress.15

3) Economic status

The income level of a grandmother has an impact on caregiving reward. Grandmothers with a low economic status recognize caring grandchildren as stress imposed on their economic status, while those with a high economic status perceive childcare as a productive and rewarding experience in the post-retirement life with much free time. Therefore, economic resource is an important factor that reduces the burden of grandchild care and enhances a sense of psychological well-being in grandmothers.6,17

4) Child-care time and motivation for childcare

Grandmothers involved only for a limited time such as caring for grandchildren only during the day were satisfied,18 but those involved in grandchild care for 24 hours showed lower satisfaction.19 The outcome implies that child-care time has an influence on childcare stress. Furthermore, this is associated with higher satisfaction in caregiving among grandmothers not co-residing with grandchildren than those co-residing.20 However, a previous study reported that no difference was found in life satisfaction between two groups with childcare time for 10 to 29 hours and more than 30 hours.21 The level of childcare stress was higher in grandmothers involved in childcare unwillingly than those...
caring grandchildren willingly, and in those not co–residing with grandchildren than those co–residing. Moreover, despite the same child–care time, controllability over time had a bigger influence on mental health in the comparison of the two groups with or without choice in childcare. The group who unwillingly chose to provide childcare had significantly severe depression, lower life satisfaction and higher level of childcare stress than the group who voluntarily provided childcare. The results indicate that the absence of controllability can have negative impact on mental health rather than the physical amount of caregiving labor.

5) Marital relationship of grandparents
Grandmothers caring for their spouses may recognize grandchildren as another subject for caregiving, and conflicts may occur. Having a good relationship with a spouse can help reduce and adapt to childcare stress. Bachman and Chase–Lansdale have proposed that grandmothers living with a husband are less stressed psychologically and emotionally healthier while taking care of grandchildren. Moreover, Dowdell has reported that grandmothers with a spouse present are less likely to experience childcare stress. In addition, spouses’ emotional support is found to decrease childcare stress and serve a supportive role.

6) Family relationship
Sands and Goldberg–Glen have suggested that childcare stress is associated with weak family ties. According to Kennedy and Keeney, the psychological well–being of grandmothers is influenced by current relationship with their adult children, Bowers and Myers have addressed that grandmothers experience deteriorated relationships with their adult children due to grandchild care. Likewise, a large number of studies have found that childcare stress has negative correlation with the parent and adult child relationship. A healthy relationship between older caregivers and adult children is identified to alleviate childcare stress by increasing the degree of satisfaction about childcare. The satisfaction of family members including children, in particular, has been found to improve depression in grandmothers. The above results indicate that relationship with adult children has an impact on the psychological well–being of grandmothers and is affected by childcare stress, and stress tends to be relieved by family relationships. Based on these findings, it is anticipated that relationship between grandmothers and adult children is an important mediating factor between stress and psychological well–being.

2. Caregiving reward for caring grandchildren

1) Recognition of the implication of grandparents
Grandmothers can newly establish the meaning and purposes of their roles as a caregiver of grandchildren by recognizing the implication of grandparents, and experience the rewards of caregiving by re–interpreting stressful situations and identifying their strengths. According to Wheelock and Jones, grandmothers want to feel a sense of belonging within the family through childcare, and their life satisfaction increases by considering themselves as being essential for family members. The reward of caregiving is mainly influenced by centripetalism, respected older adult and past experience, and centripetalism is known to have a substantial impact. Since Korean women traditionally are more likely to find their roles and importance ascribed within the family, caring for grandchildren in family contexts make grandmothers to feel a sense of centripetalism within the family and this is considered to have an impact on caregiving reward.

2) Relationship with adult children
Grandmothers feel like they are playing a crucial role in relationship with their adult children by providing substantial help for raising grandchildren, and their positions are solidified within the family. Therefore, a good relationship with adult children acts as a factor for increasing the rewards of caregiving. This outcome aligns with the finding that healthy relationship between older caregivers and adult children alleviate childcare stress by increasing satisfaction about childcare.

3) Income level
The income level of grandmothers influences their rewards of caregiving. A large number of studies have verified that older caregivers’ economic status is significantly associated with psychological well–being and life satisfaction.
and economic resources reduce the burden of childcare and promote psychological well-being.\(^5\) Thus, financial support will serve as a critical factor in caregiving reward of grandmothers. Recently, a policy of providing childcare expenses has been implemented, and this policy is a meaningful attempt to increase the rewards of caregiving and ease economic burden in families with working mothers who entrust their children to caregivers.

4) Caregiving efficacy

Caregiving efficacy can be enhanced when caregivers consider childcare as an easy task and manage themselves well. Parents with high caregiving efficacy are more likely to perform behaviors that have positive effects on child development and socio-psychological adaptation.\(^35\) This is regarded as an important factor among grandmothers caring for grandchildren. Caregiving efficacy is enhanced when there are no conflicts between a grandmother and a working mother, but caregiving efficacy is lowered when conflicts arise due to insufficient money to cover the costs of childcare.\(^10\) Furthermore, the better the health state of grandmothers, the higher the caregiving efficacy, implying that health state is profoundly related with caregiving efficacy.

3. Effect of grandchild care on mental health

1) Positive effects on mental health

Depression or anxiety and mental or emotional isolation appearing in elderly period may be reduced by building attachment relationship with grandchildren through childcare process. Moreover, grandmothers can feel a sense of belonging within your family by caring for their grandchildren, and life satisfaction is improved by considering themselves as being essential for family members,\(^32\) finding the meaning of life and achieving a sense of accomplishment. In particular, helping adult children through grandchild care seems to make positive contributions in psychological well-being.\(^36\)

2) Negative effects

Grandmothers have been found to experience negative mental health problems such as depression, anxiety, low quality of life and other due to repeated childcare tasks inappropriate in the late period of lifetime and ambiguity in roles. Grandmothers involved in raising grandchildren encounter social isolation, burden of childcare, health problems and conflicts with adult children,\(^57\) and they have more constraints limiting daily activities and lower health-related satisfaction compared to those not involved in childcare.\(^38,39\) In the study of Kelly et al.,\(^40\) grandmothers involved in childcare are found to have greater emotional and parental stress than those without childcare involvement, and experience psychological maladjustment such as depression. In domestic studies, Yang et al.,\(^41\) have reported a strong positive correlation between childcare stress and depression in grandmothers, and according to Kang\(^45\), grandmothers who are more likely to regard childcare as a barrier have more severe depression symptoms. These findings imply that the higher the childcare stress, the severer the depression. Baker and Silverstein\(^42,43\) have also addressed that grandmothers are prone to depression due to stress from raising grandchildren and have lower life satisfaction compare to those without childcare involvement.

4. Support measures for grandmothers caring for grandchildren

1) Support through the development of intervention programs

Childcare stress should be monitored on a regular basis and various intervention programs should be developed and provided for grandmothers to reduce their stress. When grandmothers are involved in raising grandchildren in conventional way, differences of opinion on childcare and conflicts among family members may arise between younger and older generations. Therefore, information and education about childcare should be provided to grandmothers caring for grandchildren. Moreover, preparatory education on child development process and stress relief is anticipated to help grandmothers to prepare themselves for future caregiving. Through these interventions, grandmothers can sustain successful elderly stage by fostering strategies for coping with their childcare stress, and will have positive effects on quality of life for themselves and entire family by accomplishing childcare tasks.
2) Support through family relationship improvement

Education on family relationship improvement is crucial for grandmothers, so other family members can support childcare, express their gratitude, and listen to difficulties. Even though, childcare causes physical fatigue, emotional support of adult children can reduce depression in elderly persons. Therefore, adult children should recognize the values of childcare and the importance of appreciation and emotional support for their mothers. Appreciation and support from family members is the best motive to grandmothers to participate in child-rearing, and can ease childcare burden. To achieve these goals, a wide range of programs should be implemented to improve family relationship, and to provide group counseling for grandmothers and adult children, education on communication skills, family camp and others.

3) Marital relationship of grandparents

Emotional support from spouse can improve childcare stress and promote psychological well-being. To be more specific, it is essential to conduct marital counseling to improve marital relationship, and couple group therapy programs to cope with new challenges in the elderly stage. In addition, interventions are desirable including education programs that can promote motives for caregiving in grandparents.

4) Social support

Comprehensive and systematic assistance programs integrating emotional, physical, informative, and appraisal support need to be applied to potential subjects to be involved in childcare. Furthermore, multi-level intervention strategies are warranted to promote conversation between parents and children and family relationship, and to build a social support network by establishing a contact list of grandmothers caring for grandchildren. Intervention is critical to enhance psychological well-being and strengthen family, neighbors and community support networks. In addition, self-help group and shelter within communities is needed.

5) Support public childcare facilities

It is crucial to establish facilities that aid childcare for grandmothers. These facilities can provide information about raising grandchildren and psychological support through counseling. Moreover, there should be centers to which grandmothers can temporarily entrust their grandchildren or receive childcare support. It is also important to provide caregiving helpers or private nursery teachers who can visit homes and assist childcare. Finally, further assistance is needed to build a community-based network of grandmothers who can serve the role of self-help group for grandmothers caring for grandchildren in the infant and child stages.

6) Intervention from a perspective of middle-aged women

Strategies improving self-esteem and perceived health state should be devised in raising expectation about aging in middle-aged women and planning intervention programs aiding successful aging and positive elderly life. To achieve this goal, there should be continued interest in health management of postmenopausal middle-aged women with low educational attainment, economic status and marital satisfaction. It is thought to be helpful to assist middle-aged women to overcome developmental crisis as a strategy enhancing low self-esteem, and to operate self-help groups in which experts and peer groups can participate together to find solutions to their problems.

7) Support for depression

Older adults are unpaid caregivers who occupy a large role in child-rearing, and they experience childcare stress and depression due to constraints to be involved in social activities. Since depression in elderly persons may lead to suicide, their depression should be monitored and managed. To resolve this problem, it is essential to provide a variety of programs including counseling service, time management, childcare stress relief and others.

8) Financial support

Financial support such as the provision of child-rearing costs should be considered for grandmothers caring for grandchildren in the infant and child stages. In recent years, some communities are providing child-rearing expenses at different rates for grandparents caring for grandchildren instead of their working adult children. These policies are expected to substantially ease the burden of
household child-rearing expenditures, and solidify the sense of psychological rewards of caregiving in grandmothers.

Conclusion

A recent growing number of dual-income households and increased women's economic participation have resulted in a gradual increase in the number of grandmothers caring for their grandchildren. After menopause in elderly women, both physical and psychological changes are often associated. Depression is one of the most serious mental health problems, leading to negative and pessimistic thoughts by easily considering oneself as an incompetent, inferior, and worthless person. Grandmothers raising grandchildren can encounter stress due to several factors, and their physical and mental health can be newly influenced by grandchildren care. The feeling of attachment and belonging formed through grandchild care may relieve depression or anxiety and reduce mental and psychological alienation in the elderly period. In contrast, depression and physical health may develop to severe degrees due to childcare stress.

Therefore, proper understanding of positive and negative aspects of childcare and support are crucial for grandmothers experiencing drastic physical and mental changes. The understanding and support are expected to provide better quality of life by promoting psychological well-being and health in grandmothers. To date, previous studies have investigated grandmothers' child-rearing only from psychiatric and social perspectives, and insufficient clinical research has been conducted on hormonal changes, physical related features and others. There should be family members' understanding of physiological changes during menopause, maintenance of healthy body with appropriate management, and interest in sustaining positive mental health. To achieve these goals, broader studies performed from a medical perspective are warranted.

Acknowledgements

This work was supported by the Soonchunhyang University Research Fund.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

References

1. Statistics Korea, Population projections for Korea: 2010–2060, Daejeon: Statistics Korea; 2011.
2. Rho SH, Current child care situation and the need for child care to support working mothers with a child under 12 months, J Korean Soc Child Welf 2010; 33: 111–28.
3. Kim SY, Jeong MK, A study on working mother's and grandmother's perceptions of childcare, J Korean Open Assoc Early Child Educ 2006; 11: 67–96.
4. Kim M, A study of the caregiving burden on grandmothers who raise their grandchildren: a phenomenological research, J Korean Acad Nurs 2007; 37: 914–23.
5. Bee HL, Mitchell SK, The developing person: a life-span approach, San Francisco, CA: Harper & Row; 1980.
6. Kim TH, Lee HH, Chung SH, Park HS, Differentiation in the management of osteoporosis between premenopausal and menopausal women, J Korean Soc Menopause 2011; 17: 21–6.
7. Ryoo EN, Park KS, Park HM, Study of nurses' knowledge and attitudes on hormone replacement therapy, J Korean Soc Menopause 2012; 18: 43–51.
8. Choi EY, A study on the relationship between mening of life and mental, physical symptoms of middle-aged women, Korean Cent J Med 1989; 54: 659–63.
9. Choe HS, Chung OB, The development of an inventory for measuring the parenting self-efficacy of Korean mothers, Korean J Child Stud 2001; 22: 1–15.
10. Park HJ, Jung HM, The temperament of grandmothers and grandchildren grandchild's parenting self-efficacy and parenting stress, J Korean Soc Matern Child Health 2010; 14: 1–11.
11. Oh J, A structural model on the quality of life of grandmothers caring for their grandchildren, J Korean Acad Child Health Nurs 2007; 13: 201–11.
12. Kim HY, Grandmothers raising grandchildren: an impact of grandmothers' parental stress on their health and quality of life [master's thesis], Daegu: Catholic University of Daegu; 2009.
13. Park HJ, Park SY, A study on factors affecting grandmothers' care support, Korea J Child Care Educ 2013; 77: 227–46.
14. Chung CW, Kim MJ, Grandmother's life satisfaction and
influencing factors by grandparenting, Korean J Women Health Nurs 2010; 16: 288–96.
15. Han SY, Mother’s parenting stress and the poorness-of-fit of temperament [master’s thesis]. Seoul: Ewha Womans University; 1996.
16. Rochman HJ, Chase–Lansdale PL, Custodial grandmothers’ physical, mental, and economic well-being: comparisons of primary caregivers from low–income neighborhoods, Fam Relations 2005; 54: 475–87.
17. Kang Y, The psychosocial well-being of grandparents raising their grandchildren: the role of resources, type of care and perception of caregiving, Korean J Popul Stud 2011; 34: 73–97.
18. Thomas JL, Age and sex differences in perceptions of grandparenting, J Gerontol 1986; 41: 417–23.
19. Bowers BF, Myers BJ, Grandmothers providing care for grandchildren: consequences of various levels of caregiving, Fam Relations 1998; 48: 303–11.
20. Yi YS, Grandmothers’ caregiving satisfaction of raising grandchildren and the related variables, Korean J Hum Ecol 2010; 19: 15–26.
21. Lee JY, Chung KM, Kim WK, The mental health study of caregiving grandmothers comparing with non-caregiving grandmothers of middle class, Korean J Woman Psychol 2008; 13: 325–41.
22. Dowdell EB, Caregiver burden: grandmothers raising their high risk grandchildren, J Psychosoc Nurs Ment Health Serv 1995; 33: 27–30.
23. Minkler M, Roe KM, Robertson–Beckley RJ, Raising grandchildren from crack–cocaine households: effects on family and friendship ties of African–American women, Am J Orthopsychiatry 1994; 64: 20–9.
24. Sands RG, Goldberg–Glen RS, Factors associated with stress among grandparents raising their grandchildren, Fam Relations 2000; 49: 97–105.
25. Kennedy JP, Keeney VT, The extended family revisited: grandparents rearing grandchildren, Child Psychiatry Hum Dev 1988; 19: 26–35.
26. Waldrop D, Weber JA, From grandparent to caregiver: the stress and satisfaction of raising grandchildren, J Contemp Soc Serv 2001; 82: 461–72.
27. Conway P, Boeckel J, Shuster L, Wages J, Grandparent caregivers’ use of resources and services, level of burden, and factors that mediate their relationships, J Intergener Relatsh 2010; 8: 128–44.
28. Prucho RA, McKenney D, Psychological well-being of Black and White grandmothers raising grandchildren: examination of a two-factor model, J Gerontol B Psychol Sci Soc Sci 2002; 57: P444–52.
29. D K, Park E, Kim S, The influence of social participation on depression of parenting grandparents and co-parenting grandparents: Mediating effect of satisfaction with family relationship, J Fam Relations 2010; 14: 183–209.
30. Travis LA, Lyness JM, Shields CG, King DA, Cox C, Social support, depression, and functional disability in older adult primary–care patients, Am J Geriatr Psychiatry 2004; 12: 265–71.
31. Kim EJ, Caregiving reward of grandmothers raising infant grandchildren and factors influencing their rewards, J Korean Gerontol Soc 2012; 32: 851–67.
32. Wheelock J, Jones K, ‘Grandparents are the next best thing’: informal childcare for working parents in urban Britain, J Soc Policy 2002; 31: 441–63.
33. Kim EJ, Chung SD, A study on the adaptive experience of a grandmother raising grandchildren: focused on family with working mother, Korean J Fam Soc Work 2011; 31: 177–213.
34. Bae JH, Factors affecting the psychological well-being of grandmothers raising grandchildren: focusing on the comparison between parenting grandparents and co-parenting grandparents, Soc Welf Policy 2007; 29: 67–94.
35. Lee HY, Participation of parents education, parenting self-efficacy & parenting stress among preschooler’s mothers [master’s thesis]. Cheongju: Chungbuk National University; 2006.
36. Chen X, Silverstein M, Intergenerational social support and the psychological well-being of older parents in China, Res Aging 2000; 22: 43–65.
37. Oh J, Care stress and quality of life of grandmothers caring for their grandchildren in employment mother’s home, J Korean Acad Child Health Nurs 2006; 12: 368–76.
38. Minkler M, Fuller–Thomason E, The health of grandparents raising grandchildren: results of a national study, Am J Public Health 1999; 89: 1384–9.
39. Musil CM, Ahmad M, Health of grandmothers: a comparison by caregiver status, J Aging Health 2002; 14: 96–121.
40. Kelley SJ, Whitley D, Sipe TA, Yorker BC, Psychological distress in grandparent kinship care providers: the role of resources, social support, and physical health, Child Abuse Negl 2000; 24: 311–21.
41. Yang SJ, Chung KM, Kim WK, An exploration of the relationship among variables affecting the psychological well-being of day-care grandmothers, Korean J Woman Psychol 2008; 13: 415–32.
42. Baker LA, Silverstein M, Depressive Symptoms Among Grandparents Raising Grandchildren: The Impact of Participation in Multiple Roles, J Intergener Relatsh 2008; 6: 285–304.