RESEARCH ARTICLE

The relationship between caregiver burden and self-care agency of pregnant women with 0–6-year-old children

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Abstract

Aim: This study aims to determine the relationship between the burden of care and self-care abilities of pregnant women with 0–6-year-old children and the factors affecting them.

Design: A cross-sectional questionnaire survey.

Methods: This study consisted of 348 pregnant women over the age of 18, with children between the ages of 0–6.

Results: The study determined that the self-care ability mean scores of mothers who have two or more children between the ages of 0–6 were low and the caregiver burden mean scores were high. The researcher found a negative correlation between the self-care ability scale scores and caregiver burden scale scores of pregnant women included in the study. These results are statistically significant and valuable in terms of revealing information about the caregiver burden and self-care ability of pregnant women with 0–6-year-old children.

KEYWORDS
caregiver burden, child, mother, pregnant, self-care

1 | INTRODUCTION

Having a baby is one of the most important decisions in one's life. Pregnancy is the most important characteristic of a woman, and it has an important place in the life of the woman because it ensures the continuity of the generation (Güleşen & Yıldız, 2013). The global total fertility rate is 2.5 births per woman (United Nations, Department of Economic and Social Affairs, Population Division, 2020). According to TSI (Turkish Statistical Institute) results, the total fertility rate is 1.88 births per woman in Turkey (TSI, 2019).

The gestation period affects the biological structure of women and changes in psychological, social and family life (Ayoubi et al., 2017). Having a healthy gestation period is important for both the woman and the baby to be born. The psychological state and lifestyle of the woman affects not only the pregnancy but also her

psychological and emotional state during pregnancy and the postpartum period. Risks during pregnancy may adversely affect her for the sake of both her own health and of her baby (Barua & Junaid, 2015). Pregnancy is a special period in which self-care agency is desired and emphasized in the literature. Pregnant women should have sufficient self-care agency to have a healthy pregnancy and to meet their antenatal care needs (Çelik Sis & Derya Aksoy, 2019). Although pregnancy is a natural process, it is a period in which the risk of disease and death is higher than other life processes in a woman's life (Taşkın, 2017). Also, pregnancy will cause difficulties for women to carry out their daily life activities and increase the caregiver burden and the responsibility of the pregnant woman in the family because of the increase in the number of children. Thus, pregnant women will spare less time for themselves, and their self-care agency will be adversely affected (Saydam Karaca et al., 2007).

2 | BACKGROUND

Pregnancy affects the biophysical, psychological and socio-economic processes in the life of the woman. Therefore, they face difficulties in daily life activities and responsibilities. In this context, it may cause a negative perception about their self-care agency. To maintain a healthy life, individuals need self-care.

According to Orem, self-care includes activities to maintain one's own health and well-being at every stage of life (Orem, 2012; Silva et al., 2017). Orem stated that many factors affect the level of self-care, and people may need partial or complete help to fulfil their self-care needs in various life periods and in some special cases (such as pregnancy). Pregnancy is one of the important periods that self-care is a need (Orem, 2012). Although pregnancy is a natural process, women's life is at a higher risk of disease and death than other life processes in this gestation period (Taşkın, 2017). Also, pregnancy will cause difficulties for women to carry out their daily life activities and increase the caregiver burden and the responsibility of the pregnant woman in the family because of the increase in the number of children (Saydam Karaca et al., 2007). Thus, pregnant women will spare less time for themselves, and this will affect their self-care negatively.

In this context, pregnant women who have children may experience changes in their caregiver role and inadequacy in self-care. The positive experiences with the mother who gives primary care to children support the child's brain development, especially in the 0–6 age period. The children, who are supported more in this period, become more successful in school and adulthood (Bayoğlu, 2015; Yavuzer, 2016). Thanks to their "mother" who gives them primary care, children discover their environment; they learn how to behave by observing their mother's movements and behaviours. In this context, they know and learn the world through the actions of their mother. Supporting women with children between the ages of 0–6 during pregnancy will improve the child's cognitive, motor, linguistic, social and emotional development areas (Yavuzer, 2016). Considering the effect of the mother who gives primary care on the child's development, the self-care agency and caregiver burdens of women have an important place in the development of the children. Self-care agency and caregiver burden, which are not studied much among pregnant women in Turkey, are important concepts to protect the individual from diseases, maintain and improve their health. Individuals need to strengthen their health consciousness and develop behaviours and skills that will enable them to use their health skills to the fullest, to lead a satisfying life both during the gestation period and after pregnancy. Although there are studies on self-care agency of pregnancy in the literature, there is no study investigating the relationship between self-care agency and caregiver burden of pregnant women with 0–6-year-old children. Therefore, the current study is of importance because it presents results obtained from a point of view that is new to the literature.

In this regard, this study aims to seek the answers to the following questions about pregnant women with at least one 0–6-year-old child:

1. Do sociodemographic characteristics affect self-care agency and caregiver burden?
2. What is the level of the caregiver burden?
3. What is the level of the self-care agency?
4. What is the relationship between caregiver burden and self-care agency?

3 | METHODS

3.1 | Study design and participants

This is a cross-sectional and descriptive study. The sample of the study consisted of pregnant women older than 18 years, with one or more children aged 0–6 years, who applied to the obstetric clinic of a public hospital between 02.01.2018–04.01.2019. The study included 348 pregnant women and used an effect size of 45%, a significance level of 0.05, and a power of 91%. The purpose of the study was explained to the pregnant women and they were asked to fill in the questionnaires. It took 15 min to fill out each questionnaire.

3.2 | Instruments

The personal information form, self-care agency scale and caregiver burden scale were used to collect data.

3.2.1 | Individual information form

The individual information consisted of 12 variables. This includes questions related to mother–child and current pregnancy such as a gestational week, age, marital status, body mass index, educational status, profession, income status, the place where they lived for the longest period, the number of people in the family, the person to support during pregnancy, the presence of another \care-receiver at home, health problems in pregnancy, prenatal care, the number of 0–6-year-old children and whether other children have a disability.

3.2.2 | Self-care agency scale

Kearney and Fleischer developed the scale in 1979, which is used to determine people's abilities to look after themselves. Nahcivan made Turkish validity and reliability study in 1993 (Nahcivan, 2015). The scale, which focuses on the assessment of individuals' self-care actions on their own, is a 5-point Likert type. Each expression can score from 0–4 points. The highest score that can be obtained from the scale is 140, and it is considered that the self-care agency increases as the score increases. The Cronbach's alpha reliability coefficient of this study is 0.77. Cronbach's alpha reliability coefficient is 0.81.

3.2.3 | Caregiver burden scale

Zarit, Reever and Bach-Peterson developed the scale in 1980. İnci and Erdem carried out Turkish validity and reliability study in 2006 (İnci & Erdem, 2008). The scale consists of 22 statements that determine the effect of those who need care on the life of caregivers. The scale has a Likert type assessment ranging from 0–4 as "never," "rarely," "sometimes," "quite often" and "almost always." The minimum score that can be obtained from the scale is 0, and the maximum score is 88. The items in the scale are mostly focused on the social and emotional areas. A high scale score indicates that the problem experienced is high. The scores obtained were evaluated as (0–20) low/no load, (21–40) mild/moderate load, (41–60) medium/high load and (61–88) overload. Cronbach's alpha reliability coefficient of the scale is 0.95. In this study, Cronbach's alpha reliability coefficient is 0.91.

3.3 | Data analysis

The data were analyzed using the SPSS package program. Demographic and descriptive data were evaluated with number-percentage. A *t*-test was used to determine the difference between the two groups. A one-way analysis of variance test was used for intergroup comparisons of the parameters when there were more than two groups. Bonferroni Post Hoc test was used to determine the group that caused the difference. The degree of significance was taken as $p < .05$.

3.4 | Ethical considerations

Before the study, the Research Ethics Committee approval was obtained from Balıkesir University Clinical Research Ethics Board (Decision date and no.29.11.2019-2017/141) and the managers' approval of the health institution. Also, before the interviews, the purpose of the study was explained to the participants, and their consent to participate in the study was obtained. The anonymity of participants and the confidentiality of the information provided were maintained throughout the study and in subsequent public presentations of results. Participants had the right to withdraw at any stage of the study. Furthermore, all of the requirements established in the Helsinki Declaration were followed, thus guaranteeing against future ethical problems that could arise from the research.

4 | RESULTS

4.1 | Sample characteristics

In the study, 48.3% of the pregnant women (mean age 28.41 ± 4.13) were between the ages of 25–29, 47.1% were primary school graduates, 71.3% were housewives, 44.8% were living in the city center and 71.3% had no chronic disease. The results revealed that 58.6% of the pregnant women had three to four people in their families, 42.5% did not have another individual to share the responsibility at home and 86.2% had one child younger than 6 years. This study had found that 77.0% of the participants were in the third trimester of pregnancy, 55.2% of them did not attend a special education about pregnancy, 89.7% of the pregnancies were planned and 80.5% of them were followed up at the state hospital.

4.2 | Evaluation of scale scores with sociodemographic variables

Evaluation of scale scores with sociodemographic variables pointed out a statistically significant difference between the age group of the pregnant women and their average scores of self-care agency and caregiver burden scales. Further analysis showed that difference occurred due to the 20–24 age group and 30 and over age group. Pregnant women in the over 30 age group had a lower mean score on the self-care agency scale and a higher mean score on the caregiver burden scale ($p < .001$).

A statistically significant difference was found between the education level and the self-care agency and caregiver burden means (Table 1). Advanced analysis, which was conducted to find out which group causes the difference in education level, revealed that university graduates and elementary school graduates caused the difference. The self-care agency mean scores of the university graduate pregnant women were higher, and the caregiver burden mean scores were lower ($p < .001$).

A statistically significant difference was found between the profession of pregnant women and their self-care agency and caregiver burden means. Bonferroni test, which was conducted to find out which profession group the difference originated from, showed that the difference was caused by pregnant women and housewives. The study revealed that the self-care agency mean scores of the pregnant women who were civil servants were higher, and the caregiver burden mean scores were lower ($p < .001$) (Table 1).

As can be seen in Table 1, there was a statistically significant difference between the place where the pregnant women live and the caregiver burden scores. Further analysis showed that the difference was due to the pregnant women living in the city center and those living in the district. The mean scores of those living in the city center were statistically significantly higher ($p < .05$). This study had determined that the caregiver burden mean scores of those with chronic disease were higher, and the difference was statistically significant ($p < .05$).

Evaluation of the scale scores of the participants according to their family characteristics showed that the self-care agency mean scores of those with three to four people in their family were higher and the caregiver burden mean scores were lower ($p < .001$). A statistically significant difference was found between being supported by a family member and the caregiver burden average scores. Further analysis revealed that the difference was due to pregnant women who received support from their partners and pregnant

TABLE 1 Analysis of scores of self-care agency scale and caregiver burden scale in terms of sociodemographic characteristics

Variables	N (348)	%	Self-care agency scale X ± SD	Caregiver burden scale X ± SD
Age, y(avg. age: 28.41 ± 4.13)				
20–24y	60	17.2	98.00 ± 12.98	27.46 ± 13.34
25–29	168	48.3	105.09 ± 14.57	27.69 ± 11.32
>30	120	34.5	44.20 ± 6.49	68.20 ± 8.85
F*			94.426	54.743
p			,000	,000
Education level				
Elementary education	164	47,1	77.12 ± 30.14	45.46 ± 22.36
High school	124	35,6	83.83 ± 30.25	42.54 ± 21.90
University	60	17,2	96.60 ± 28.83	29.20 ± 20
F*			9.381	12.794
p			,000	,000
Occupation				
Housewife	248	71.3	79.19 ± 31.09	43.75 ± 22.59
Goverment employee	36	10.3	101.11 ± 25.28	25.22 ± 12.96
Self-employee	64	18.4	86.87 ± 27.89	42.46 ± 21.01
F*			9.095	11.734
p			,000	,000
Place of Longest Residence				
Village	84	24.1	77.95 ± 31.23	41.38 ± 24.13
District	108	31.0	87.48 ± 29.35	36.77 ± 19.10
Province	156	44.8	82.33 ± 31.01	45.10 ± 22.55
F*			2,341	4.596
p			,098	,011
Chronic Disease Status				
Yes	100	28.7	86.22 ± 30.05	40.51 ± 12.42
No	248	71.3	74.56 ± 30.77	44.36 ± 17.06
t**			1.411	6.271
p			,001	,157

Note: *F: one-way ANOVA test, **t: Student t test.

Abbreviations: ANOVA, analysis of variance; SD, standard deviation; X, Mean.

$p < .05., p < .01.$

women without support. The caregiver burden mean scores of pregnant women who received support from their partner was lower ($p < .05$). The self-care agency mean scores of women with two or more children younger than 6 years were lower, and the caregiver burden mean scores were higher. The difference between them was statistically significant ($p < .001$) (Table 2).

Evaluation of the scale scores of the participants according to their pregnancy characteristics showed that the average self-care agency score of pregnant women who were in the 2nd trimester and of those who received education about pregnancy, and of those who had planned their pregnancy, was higher. The difference between them was statistically significant ($p < .05$) (Table 3).

4.3 | Relationship between the self-care agency scale scores and the caregiver burden scale scores

The self-care agency scale scores of the pregnant women ranged between 36–132, and the average was 82.87 ± 30.67. The caregiver

burden scale scores of the pregnant women ranged between 9–85, with an average of 41.62 ± 22.17. A negative correlation was determined between the self-care agency scale scores and the caregiver burden scale scores of pregnant women ($r = −0.860, p = .035$) (Table 4).

5 | DISCUSSION

Pregnancy is a physiological process in which women experience significant biological changes and a complex sociological, psychological and developmental crisis. It is important that a woman embraces her pregnancy and future mother role during this period. This study, which investigated the relationship between self-care agency and caregiver burden of pregnant women with 0–6-year-old children, showed that the self-care agency mean scores of the pregnant women aged 30 and over were lower and the caregiver burden mean scores were higher. Recent studies showed that the self-care agency mean scores of pregnant women between the ages of 20–34 were

TABLE 2 Analysis of scores of self-care agency scale and caregiver burden scale in terms of family characteristics

Variables	N (348)	%	Self-care agency scale X ± SD	Caregiver burden scale X ± SD
Number of people in the family				
3–4	204	58.6	89.13 ± 28.57	35.64 ± 19.80
>5	144	41.4	74.00 ± 31.45	50.08 ± 22.66
t*			15.468	19.391
p			,000	,000
Family support person				
Wife	120	34.5	84.16 ± 30.14	38.13 ± 22.64
Mother–father	80	23.0	85.60 ± 29.95	41.25 ± 20.32
None	148	42.5	80.35 ± 31.49	44.64 ± 22.46
F*			0.922	2.906
p			,399	,050
Having children younger than 6 years				
1 child	300	86.2	114.91 ± 12.68	23.75 ± 4.50
>2 child	48	13.9	77.74 ± 29.59	44.48 ± 22.54
t**			92.792	144.967
p			,000	,000

Note: *F: oneway ANOVA test, **t: Student *t* test.

Abbreviations: ANOVA, analysis of variance; *SD*, standard deviation; X, Mean.

p < .05., *p* < .01.

TABLE 3 Analysis of scores of self-care agency scale and caregiver burden scale in terms of gestation period features

Variables	N (348)	%	Self-care agency scale X ± SD	Caregiver burden scale X ± SD
Gestational trimester				
2. Trimester	80	23.0	94.25 ± 28.63	37.70 ± 17.21
3. Trimester	268	77.0	79.47 ± 30.49	42.79 ± 23.35
t**			13.170	39.892
p			,000	,035
Education during pregnancy				
Yes	156	44.8	87.46 ± 30.08	35.48 ± 20.21
No	192	55.2	79.14 ± 30.73	46.60 ± 22.50
t**			4.208	8.719
p			,012	,000
Planned of pregnancy				
Yes	312	89.7	84.20 ± 30.30	40.07 ± 21.58
No	36	10.3	71.33 ± 31.39	55.00 ± 23.06
t**			0.069	0.764
p			,017	,000

Note: **t: Student *t* test.

Abbreviations: *SD*, standard deviation; X, Mean. *p* < .01.

higher (Can Öztürk et al., 2019; Çelik Sis & Derya Aksoy, 2019). In our study, the self-care agency mean scores were lower than other studies. The reason was believed to be linked with advanced maternal age. Older women feel biologically more tired when compared with younger pregnant women, their self-care agency decreases and their caregiver burden, pregnancy risks and complaints increase because of advanced maternal age.

The findings showed that the self-care agency mean scores of the university graduate pregnant women were higher, and the caregiver burden mean scores were lower. Recent studies also showed that the self-care agency mean scores of the university graduate pregnant women were higher (Altıparmak, 2006; Can Öztürk et al., 2019; Çelik Sis & Derya Aksoy, 2019). This may be associated with the fact that pregnant women with higher education can use their support

TABLE 4 The distribution of self-care agency score and caregiver burden score, and analysis of the correlation between pregnant women score of self-care agency and caregiver burden

Variables	Highest and Lowest Scores Min–max	Highest and Lowest Scores Min–max	$X \pm SD$	r	p	N
Self-care agency scale	0–140	36–132	82.87 ± 30.67			
Caregiver burden scale	0–88	9–85	41.62 ± 22.17	−0,860	,035*	348

Note: Abbreviations: Max, maximum; Min, minimum; *SD*, standard deviation; X, Mean.

*Pearson correlation analysis, *p* < .01.

systems more effectively while performing their responsibilities at home and cope with caregiver burden more easily.

Our research results showed that the self-care agency mean scores of pregnant women who were civil servants were higher, and the caregiver burden mean scores were lower. Also, in other studies, the self-care agency mean scores of pregnant women working in an income-generating job were higher (Altıparmak, 2006; Çelik Sis &Derya Aksoy, 2019). Self-care agency results showed similarity with the literature. Because working life contributes to the home financially, it increases women's self-confidence and positively affects self-care. At the same time, it is more likely for the working women to plan their dues, receive support in the household and take time for them while they fulfil their responsibilities at home (child care, cooking, etc.). These may reduce the caregiver burden.

The study showed that the caregiver burden mean scores of the pregnant women living in the city center were higher than those living in the village and the district. This situation may be due to reasons such as more active social life in the city, spending more time on transportation and effort to meet basic needs than in small places.

This study had identified that the caregiver burden mean scores of pregnant women with chronic disease were higher. Having a chronic disease in addition to pregnancy increases the burden of pregnant women. Mothers with chronic diseases should apply to the nearest health institutions where they can get support and education at the moment of planning a new pregnancy. Although this provides a healthy pregnancy for the mother, it gives an opportunity to take better care of other children in need of care. As a result, it is important to direct pregnant women with chronic diseases to appropriate health institutions.

Our research results showed that the self-care agency mean scores of the pregnant women who live in three or four-people families, which is the nuclear family structure, were higher, and the caregiver burden mean scores were lower. A recent study also showed that the self-care agency mean scores of pregnant women with nuclear family were higher (Çelik Sis & Derya Aksoy, 2019). The low number of people in the family increases the self-care agency and decreases the caregiver burden because pregnant women may take more time for them.

The result revealed that the caregiver burden mean scores of pregnant women who were always supported by their partners were lower compared with others. Social support is the support provided by a partner, family members and friends (Golmakani et al., 2020). The social support system is important in the prevention, solution

and treatment of the individual's sociological and psychological problems, and in dealing with difficult and troublesome situations. Literature has shown that the participation of a father during pregnancy has important social, emotional and clinical effects. For example, in the study by Puspita et al. (2015), conducted with 263 pregnant women in Indonesia, factors such as knowledge of self-care, perceived benefits of self-care and satisfaction with social support were determined to affect women's self-care behaviours during pregnancy. Similarly, another study showed that a father's participation in pregnancy increases the probability that the mother will receive prenatal care 1.5 times (Martin et al., 2007). Previous studies have found that the partner of the pregnant woman was the most supportive person during pregnancy (Metin & Pasinlioğlu, 2014; Vırıt et al., 2008). The researcher linked it with the fact that partners feel joyful and excited because of the introduction of a new individual to their family, and it is important to continue one's bloodline in Turkey, especially fathers-to-be try their best to support their partners in every aspect with the joy of being a father.

The study showed that the self-care agency mean scores of pregnant women with two or more children younger than 6 years were lower. There are studies indicating that the self-care agency mean scores decrease as the number of children increases (Aktaş & Karaçam, 2017; Çelik Sis & Derya Aksoy, 2019; Şanlı & Öncel, 2014). This study had shown that those who have two or more children younger than 6 years had a high caregiver burden mean score. As the ages of other children decrease, the energy and time spent by pregnant women for them will increase. Therefore, while the caregiver burden increases, the self-care agency will decrease.

Evaluation of the scale scores of the participants according to their pregnancy characteristics showed that the pregnant women who were in the 2nd trimester had a higher self-care agency mean score and a lower caregiver burden mean score than the pregnant women in the 3rd trimester. Recent studies showed that the self-care agency mean scores of pregnant women who were in the 2nd trimester were higher (Can Öztürk et al., 2019; Çelik Sis & Derya Aksoy, 2019). The reason for this is considered that the mother's ability to move is getting restricted because of the extensive growth of the uterus in the 3rd trimester, and they feel more tired because of the enlargement of the body.

The result revealed that the self-care agency mean scores and caregiver burden mean scores of the women who were trained during pregnancy and planned pregnancy were higher. The literature has shown that the care given in line with Orem's Self-Care Model increases the self-care agency of pregnant women at risk of preterm

labor (Kılıç & Erci, 2017). Prenatal education increases compliance with motherhood and facilitates baby care. In this way, the self-care agency of pregnant women will increase, and the caregiver burden will decrease. Directing pregnant women to pregnant schools is of great importance for raising healthy generations.

The study showed that the self-care agency mean scale score of pregnant women was 82.87 ± 30.67 (min = 36, max = 132). Researches on self-care agency in pregnant women showed the average self-care agency score (Aktaş & Karaçam, 2017; Can Öztürk et al., 2019; Çelik Sis & Derya Aksoy, 2019; Saydam Karaca et al., 2007). When the mean scores obtained from the self-care agency scales are interpreted according to the scores that can be obtained from the scales, the self-care agency levels of the women included in the studies were moderate.

This study had shown that the caregiver burden mean scale score was 41.62 ± 22.17 (range: 9–85). This result showed that pregnant women have a moderate–high caregiver burden. Tanrıkulu and Özden Attepe (2019) found that the caregiver burden scale score was 47.94 in the study which examined the caregiver burden of women who take care of a family member in their home. Eğilli and Sunal (2017) found that the caregiver burden mean scores of the family members who provide care were 31.93.

A negative correlation was found between the self-care agency scale scores and caregiver burden scale scores of pregnant women included in the study. This result shows that as the self-care agency increases, general caregiver burden behaviour decreases in pregnant women. The literature has no studies investigating the relationship between self-care agency and caregiver burden during pregnancy. These results reveal the need for more studies on this subject.

6 | LIMITATIONS

The study reached pregnant women with fewer children because the data were collected only from the obstetrics clinic. The researcher asked for permission to conduct the study in both pediatric and obstetric polyclinic, but the health institution only approved it to be performed in the obstetric polyclinic. This situation prevented reaching more people for the research. The researcher recommends further studies in a larger population.

7 | CONCLUSION

This study conducted with pregnant women with children between the ages of 0–6 showed that the self-care agency and caregiver burden of the pregnant women were moderate. The study determined that sociodemographic characteristics affect self-care agency and caregiver burden. The researcher found that the self-care agency mean scores of pregnant women with two or more children aged between 0–6 were lower and the caregiver burden mean scores were higher. A negative correlation was found between the self-care agency and caregiver burden of pregnant women included in the study.

In line with the results of the study, the researcher recommends that midwives and nurses working in the mother–child health field such as obstetric polyclinics and family health centers should:

- Lay emphasis on self-care and the reduction of caregiver burden, which increases during pregnancy, to increase the self-care agency and to improve health practices during pregnancy,
- Identify the level of self-care agency and the amount of caregiver burden during pregnancy, determine the factors affecting them and introduce the support system to the family,
- Teach self-care practices to pregnant women who cannot meet their needs and who have low self-care agency and to provide consultancy and training for support systems during pregnancy,
- Encourage pregnant women to consult midwives and nurses on issues where there is a lack of information,
- Recommend to consult the pregnant women to make the support systems effective in the care of the child aged between 0–6.

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