

Relationship between Family Support and Family Burden in Families With Cancer: Meta-Analysis

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ABSTRACT

Background: Cancer is a chronic disease caused by abnormal cell growth with special care needs that causes a burden on the family. Family support can have a significant impact on family burden. Adequate support from family members can lighten the burden on individuals or families and improve their overall well-being. This study aimed to estimate the relationship between family support on family burden in families with cancer obtained from several previous similar studies.

Subjects and Method: This research was conducted using a systematic review and meta-analysis with PICO namely, Population: family with cancer; Intervention: good family support; Comparison: Lack of family support; Outcome: family burden. By searching articles in 4 databases namely PubMed, Google Scholar, Science Direct, and ProQuest published from 2014 to 2022, entering the following keywords “Family support” OR “Supportive Family” AND “Family Burden” OR “Family depression” AND “Chronic Disease” AND “Cancer” AND “Multivariate Analysis”. Articles were selected using PRISMA flow and data analysis using the Review Manager 5.3 application.

Results: There 9 articles using the cross-sectional study design with a total sample of 2,832 subjects from India, Japan, USA, Swiss, Austria, Yunani, Germany, and Mexico which have been subject to systematic review and meta-analysis. The results showed that good family support are effective in decreasing family burden, and the results are statistically significant. Families with cancer who receive good family support are decrease family burden 0.57 times than families with cancer receive lack family support (aOR= 0.57; 95% CI= 0.38 to 0.85; p= 0.006).

Conclusion: Good family support are effective in decreasing family burden.

Keywords: family support, family burden, chronic disease, cancer.

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BACKGROUND

Family support refers to the various forms of assistance and care provided to an individual or a family by other family members. This support can take the form of emotional, financial, or practical help, and can improve the well-being of the recipient (Wang and Brown, 2009).

On the other hand, family burden refers to the negative impact that caring for a family member with a chronic illness, disability, or other need has on the well-being and daily functioning of the caregiving family members. This burden can be physical, emotional, financial, and social, and can result in strain, stress, and burnout (Thakur et al., 2018).

Family support can have a significant impact on family burden. Adequate support from family members can alleviate the burden experienced by an individual or family and improve their overall well-being. On the other hand, lack of support from family members can exacerbate the burden and increase stress and strain on the individual or family. The level and type of support needed may vary based on individual circumstances, but overall, having a supportive family can play a crucial role in reducing the burden experienced in different life domains (Wang and Brown, 2009).

Chronic diseases, such as diabetes, heart disease, and cancer, can have a profound impact on the daily lives of those affected and their family members. Caregiving for a loved one with a chronic disease often involves providing practical support, managing medication and treatment plans, and assisting with activities of daily living. This can result in increased stress, anxiety, and depression for the caregiver and can impact their own physical and mental health (Horbar et al., 2012).

The level of burden can vary depending on factors such as the severity of the disease, the amount of support received from other sources, and the overall health and functioning of the caregiver. Adequate support from family members, healthcare providers, and community resources can alleviate the burden of caregiving and improve the well-being of both the caregiver and the person with the chronic condition (Hu et al., 2020).

It's important to acknowledge and address the needs of both the person with the chronic disease and their caregivers to ensure that they receive adequate support and resources to manage the burden of caregiving.

Family burden refers to the physical, emotional, and financial strain that family

members experience when caring for a loved one with a chronic condition such as stroke. Family members of stroke patients often play a crucial role in providing care and support, which can result in increased stress, anxiety, and depression (Wang and Brown, 2009).

The burden can vary depending on factors such as the severity of the stroke, the amount of support received from other sources, and the overall health and functioning of the caregiver. Family support can mitigate the burden of caregiving by providing emotional support, practical assistance, and financial resources, but the lack of support can increase the burden and negatively impact the health and well-being of the caregiver (Thakur et al., 2018).

It's important for health care providers to assess and address the needs of both the stroke patient and the caregiver to ensure that both receive adequate support and resources to manage the burden of caregiving. Also, important to note that while family support can be a source of strength and comfort, it can also contribute to family burden if the support is perceived as inadequate or if the caregiver feels unsupported. In such cases, it's important to seek out additional support and resources to mitigate the impact of family burden.

Based on that background, comprehensive research is needed from various studies and previous literature on the relationship between family support on family burden in families with cancer.

SUBJECTS AND METHOD

1. Study Design

This was a systematic review and meta-analysis with PICO namely, Population: family with cancer; Intervention: good family support; Comparison: Lack of family support; Outcome: family burden. By searching articles in 4 databases namely

PubMed, Google Scholar, Science Direct, and ProQuest, entering the following keywords “Family support” OR “Supportive Family” AND “Family Burden” OR “Family depression” AND “Chronic Disease” AND “Cancer” AND “Multivariate Analysis” using the PRISMA flow diagram.

2. Steps of Meta-Analysis

Meta analysis was carried out in 5 steps as follows:

- 1) Formulate research questions in PICO format (Population, Intervention, Comparison, Outcome).
- 2) Look for primary study articles from various electronic and non-electronic databases such as PubMed, ScienceDirect, Google Scholar, Scopus.
- 3) Perform screening to determine inclusion and exclusion criteria and carry out a critical assessment
- 4) Extract primary study data and synthesize effect estimates using the RevMan 5.3 application.
- 5) Interpret the results and draw conclusions.

3. Inclusion Criteria

The inclusion criteria of this study were full-text English articles and an observational research design, the subject of the study was family with cancer, and the outcome of the study was family burden.

4. Exclusion Criteria

Exclusion criteria from this study were the size of the results of the study were not complete or did not clearly describe the results, the year of publication was more than 10 years from the time this study was conducted, the intervention and study population were different.

5. Operational Definition of Variables

Article search was carried out by considering the eligibility criteria determined using the PICO model.

Family support refers to the emotional, practical, and financial assistance provided

by family members to one another. This can include providing care and assistance for elderly or ill family members, offering emotional support during difficult times, and providing financial assistance when necessary. Currently, measuring instrument used using a questionnaire.

Family burden defined all the difficulties and challenges experienced by families as a consequence of someone's illness. Family burden may relate to caring or caregiving to some extent, but the two constructs are not identical. measuring instrument used using a questionnaire.

Family with Cancer are is a family living with one of their family members having a chronic disease of cancer. It can occur in almost any part of the body and has many different forms, such as lung cancer, breast cancer, prostate cancer, and colon cancer.

6. Study Instruments

This systematic review was carried out following the PRISMA flow diagram guidelines, with an assessment of the quality of the articles using the Critical Appraisal Skills Program (CASP).

7. Data Analysis

The data in this study were analyzed using the Review Manager application (RevMan 5.3). Forest plots and funnel plots are used to determine the effect size and heterogeneity of the data. Data processing is carried out based on variations between studies by determining the use of an analysis model, namely the fixed effect model or the random effect model.

RESULTS

The primary article searches in this study used databases, namely Google Scholar, Elsevier, PubMed, ProQuest, and Science Direct. The process of screening articles according to the research criteria can be seen in the PRISMA flow diagram (Figure 1). The initial search process obtained 1,627

then after going through the screening process, 1,292 articles were obtained which were considered as primary articles of this study, and 9 articles were include in this meta-analysis. The articles obtained came from 3 continents, namely Asia (India and Japan), America (Mexico), and Europe (USA, Swiss, Austria, Yunani, Germany).

Study quality assessment was carried out quantitatively, where this study used study quality assessment for a randomized

controlled trial design based on the Critical Appraisal Skills Program in 2014. The results of the study quality assessment based on CASP can be seen in Table 1.

Table 2 contains brief descriptions of 9 articles relating to the relationship between family support on family burden in families with cancer.

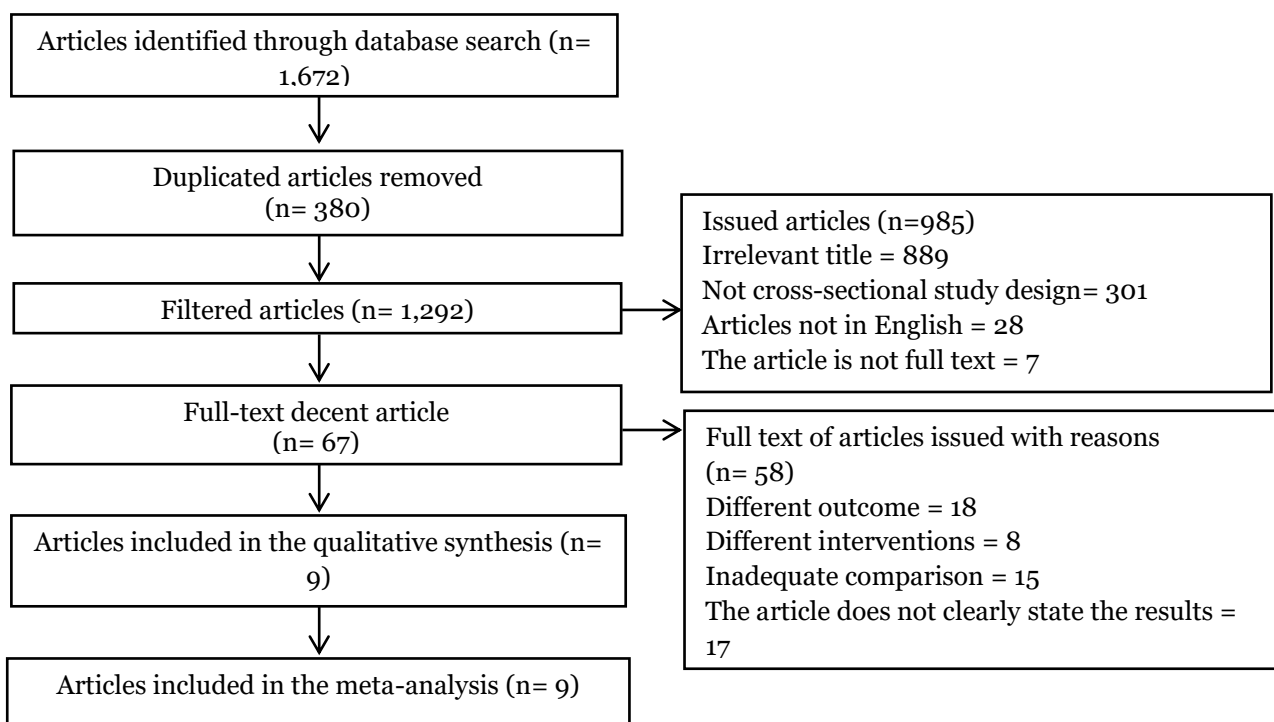


Figure 1. Results of Prisma Flow Diagrams



Figure 2. Research Distribution Map

Table 1. Critical Appraisal using CASP

Primary Study	Criteria												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Friedemann & Buckwalter (2014)	2	2	2	2	2	2	2	2	2	2	2	2	24
Toledano & Domínguez-Guedea (2019)	2	2	2	2	2	2	2	2	2	2	2	2	24
Mattoo et al. (2013)	2	2	2	2	2	2	2	2	2	2	2	2	24
Thakur et al. (2018)	2	2	2	2	2	2	2	2	2	2	2	2	24
Mahrer-Imhof et al. (2013)	2	2	2	2	2	2	2	2	2	2	2	2	24
Schrank et al, (2016)	2	2	2	2	2	2	2	2	2	2	2	2	24
Govina et al. (2015)	2	2	2	2	2	2	2	2	2	2	2	2	24
Amano et al. (2016)	2	2	2	2	0	2	0	2	2	2	2	2	20
Oechsle et al. (2019)	2	2	2	2	2	2	2	2	2	2	2	2	24

Description of the question criteria:

- 1 = Do the research objectives clearly address the focus/problem of the research?
- 2 = Is the research method (research design) suitable for answering the research question?
- 3 = Is the research subject selection method clearly written?
- 4 = Does the sampling method give rise to bias (selection)?
- 5 = Does the research sample take represent the designated population?
- 6 = Was the sample size based on pre-study considerations?
- 7 = Is the measurement method achievable?
- 8 = Are the research instruments valid and reliable?
- 9 = Was statistical significance assessed?
- 10 = Is the approximate effect, correct? Is there a confidence interval?
- 11 = Are there any confounding factors that have not been taken into account?
- 12 = Are the results applicable to your research?

Answer score description:

- 0 = No
- 1 = Can't tell
- 2 = Yes

Table 2. Summary of Articles the Relationship between Family Support on Family Burden in Families with Cancer

Author (Year)	Country	Sample	P	I	C	O
Friedemann & Buckwalter (2014)	USA	533	Family with cancer members in USA	Helpful family.	Not helped family.	Caregiver role perception, workload, family burden,
Toledano & Domínguez-Guedea (2019)	Mexico	416	Family caregivers of children with cancer	Good support	Lack support	Family burden
Mattoo et al. (2013)	India	120	120 Men with family cancer members	Good knowledge, good support	Lack of knowledge, lack of support	Family burden
Thakur et al. (2018)	India	180	Triple-Negative Breast Cancer in India	Family good support	Lack support	Family burden, stress.
Mahrer-Imhof et al. (2013)	Swiss	137	Family of adult's patients with	Good support	Lack support	Family burden, family health,

Author (Year)	Country	Sample	P	I	C	O
Schrank et al. (2016)	Austria	412	cancer Family members of terminally ill cancer patients	Supportive family	Not helped family	and personal mental health Family burden, stress. And depressipn
Govina et al. (2015)	Yunani	100	family members caring for patients with advanced cancer in Greece.	Care family	Not caring family	Family burden, anxiety, and depression.
Amano et al. (2016)	Japan	702	Families of advanced cancer patients	Support of families.	Not received support	Nutritional status, family burden, major depression.
Oechsle et al. (2019)	Germany	232	Family caregivers of patients with advanced cancer	Family good support	Lack support	Family burden, Anxiety, Distress, Depression.

Table 4. Adjusted Odd Ratio and 95% CI.

Author (year)	aOR	95% CI	
		Lower Limit	Upper Limit
Friedemann & Buckwalter (2014)	1.02	0.90	1.15
Toledano & Domínguez-Guedea (2019)	0.87	0.21	0.65
Mattoo et al. (2013)	0.49	0.43	0.56
Thakur et al. (2018)	0.84	0.26	2.71
Mahrer-Imhof et al. (2013)	0.90	0.20	4.05
Schrank et al. (2016)	0.36	0.26	0.50
Govina et al. (2015)	0.22	0.11	0.43
Amano et al. (2016)	0.74	0.21	2.61
Oechsle et al. (2019)	0.63	0.42	0.95

1. Forest Plot

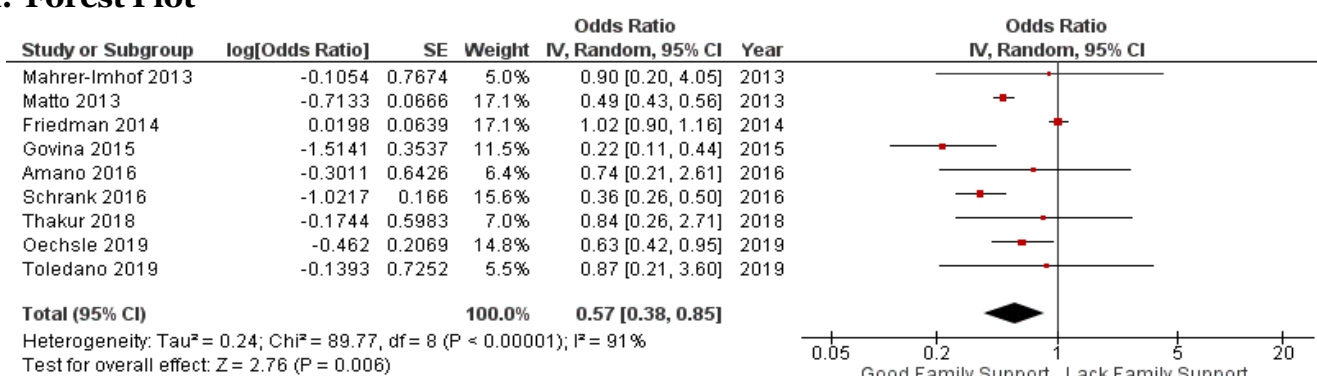


Figure 3. Forest Plot the Relationship between Family Support on Family Burden in Families with Cancer

The forest plot in figure 3 showed that good family support is effective for decreasing family burden in families with cancer, the results are statistically significant. Families

with cancer who receive good family support are decrease family burden 0.57 times than families with cancer receive lack family su-

pport (aOR= 0.57; 95% CI= 0.38 to 0.85; p= 0.006).

The forest plot in figure 3 also showed the effect estimates between studies with

high heterogeneity ($I^2= 91\%$), thus calculating the effect estimates using the Random Effect Model (REM) approach.

2. Funnel Plot

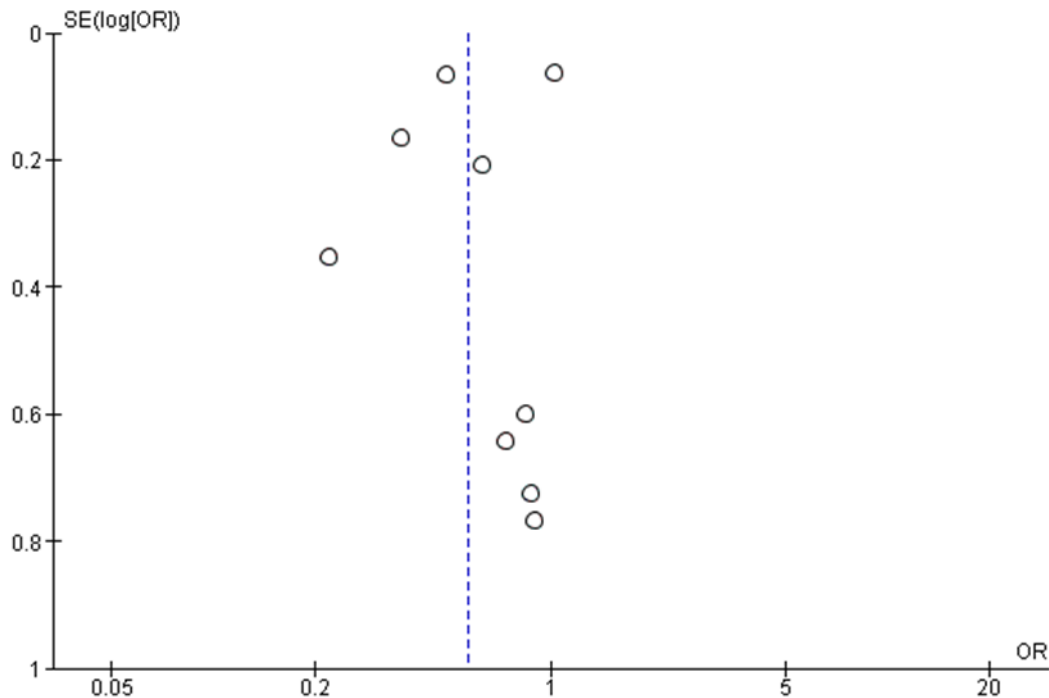


Figure 4. Funnel plot of the Relationship between Family Support on Family Burden in Families with Cancer

The funnel plot in figure 4 showed that the distribution of effect estimates is more to the right of the average vertical line, indicating publication bias. Because there are more effect estimates in the funnel plot to the right of the vertical line which is the same as the average effect estimate (•) in the forest plot on the right, publication bias tends to over estimate the effects.

DISCUSSION

This systematic study and meta-analysis research raised the relationship between family support on family burden in families with cancer. This research is considered important because the intervention of family support especially good family support can decrease family burden.

The results of a meta-analysis of 9 articles showed that good family support was effective in decreasing family burden, and were statistically close to significant. Families with cancer who receive good family support are decrease family burden 0.57 times than families with cancer receive lack family support (aOR= 0.57; 95% CI= 0.38 to 0.85; p= 0.006).

Cancer diagnosis can indeed create a significant burden for families. Caring for a loved one with cancer can be physically, emotionally, and financially draining, and can disrupt normal daily routines and relationships. Family members may have to take on additional responsibilities, such as providing transportation to appointments, help-

ing with household chores, and taking time off work (Govina et al., 2015).

Cancer can make a family burden for several reasons there is physical strain, emotional stress, financial burden, disruptions to daily life, changing relationships. The most felt by the family if you have a family affected by cancer is financial burden, it's because cancer treatment and associated expenses can put a significant financial strain on families. Medical bills, lost wages, and other expenses can add up quickly, especially if the person with cancer is unable to work (Mosher et al., 2013).

Another experience by family member among families with cancer it's about disruptions to daily life, a cancer diagnosis can disrupt normal daily routines, including work, school, and social activities. Family members may need to take time off work to care for the person with cancer, and children may have to miss school (Govina et al., 2015).

Mosher et al. (2013) also stated that financial stress can also arise from medical expenses and lost income. All of these factors can lead to feelings of overwhelm, exhaustion, and a decrease in overall quality of life for the family. However, having a strong support system, including friends, family, and support groups, can help alleviate some of these stressors and make the journey easier for everyone involved.

The burden experienced by families of cancer patients can have a significant impact on the recovery of the patient. Research has shown that family support and a positive home environment can play a crucial role in the physical and emotional well-being of cancer patients. Some of the ways that family burden can impact the recovery of cancer patients include increased stress, decrease quality of life, poor adherence to treatment, decrease physical and emotional well-being, and difficulty sleeping. It's impor-

tant for families to receive support and resources to help them manage the stress and strain of caring for a loved one with cancer, so that they can provide the best possible care for their loved one and improve their chances of recovery (Sercekus et al., 2014).

Having a supportive family can help decrease the burden experienced by a family member who has cancer. Receiving emotional, practical, and informational support from family members can help ease the stress and anxiety that often accompany a cancer diagnosis (Aflakseir et al., 2018).

Govina et al. (2015) stated that having a supportive network can improve the overall quality of life for the person with cancer and help them feel less isolated and alone during their journey. However, it's important to keep in mind that everyone's experience with cancer is unique, and what works for one person may not work for another. It's important to listen to the needs and preferences of the individual with cancer and provide support in the way that they find most helpful.

Good support from family can greatly improve the recovery of cancer patients. Studies have shown that patients who receive emotional and practical support from their family and friends have better outcomes, including improved physical and emotional well-being, better adherence to treatment, and a higher quality of life. In summary, good family support can play a crucial role in the recovery of cancer patients. It's important for families to provide emotional, practical, and informational support to their loved one during their cancer journey, as well as seek support for themselves as they navigate this difficult time (Rock et al., 2015).

AUTHOR CONTRIBUTION

Sang Ayu Made Adyani is the main writer who chooses research topics, looking for ar-

ticles. Arief Wahyudi Jadmiko processes articles, and makes publication manuscripts.

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This research used personal funds.

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CONFLICT OF INTEREST

There was no conflict of interest in the study.

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