

Research Article

The Experience of Families Caring for Asthma Sufferers During the COVID-19 Pandemic in Indonesia: A Qualitative Research

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Familial support was essential to the care of asthma patients during the COVID-19 pandemic. It helps clients in making asthma care decisions. The purpose of this study was to explain the experience of families in providing asthma care and the effects of family care on the patient during the COVID-19 pandemic in Indonesia. This qualitative study was conducted using a content analysis approach on three families in East Java Province, Indonesia. Data were collected from the 3 families, using semi-structured interviews between 2020 and 2021. The subjects were all families in which some members had asthma. Sampling was done using the purposeful technique with maximum variation. Immediately after each interview, the content was transcribed using the Word software. The interviews were conducted with one individual at a time in the family's home. Data were analyzed using the conventional content analysis method with simultaneous data collection based on five steps. The data analysis showed three main themes: family burdens and disruption when asthma relapsed, using a mask, keeping up stamina, keeping the mind relaxed, and staying away from crowds as an effort to prevent asthma, and pharmacological and non-pharmacological treatments carried out by families. The burden faced by the family when the disease recurs can be curbed through the family's taking anticipatory measures that involve cooperation between family members. The family also plays a vital role in limiting the patient's activities when the disease relapses.

Keywords: Family, Experiences, Asthma, Qualitative research, Covid-19

1. Introduction

Asthma is defined as a chronic inflammatory disease that attacks the respiratory tract characterized by recurring and reversible symptoms (1). Genetic factors make a person more susceptible to Asthma, and environmental factors can increase the risk (2). People with Asthma are expected to be more vigilant during the Covid-19 pandemic. This is because the coronavirus attacks the respiratory system in people with Asthma so that Asthma makes a person more susceptible to severe illness due to coronavirus (3).

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Covid-19, the first in Indonesia with two positive cases on March 2, 2020 (4). Covid-19 is caused by Coronavirus 2 or Sars-CoV-2(5). There were more Covid-19 cases compared to SARS cases (6). Common symptoms of Covid-19 include fever, cough, diarrhea, and weakness (7). Prompetchara, Ketloy, & Palaga (2020) (8), mentioned that another symptom of Covid-19 is shortness of breath, an acute respiratory syndrome disorder. Shortness of breath is one of the most commonly felt symptoms and is found in sufferers of Covid-19 (9). In general, people with Asthma complain of shortness of breath (10).

According to Kartina et al. (2020) (11), the prevalence of Asthma worldwide is predicted to increase by 400 million in 2025. Meanwhile, in Indonesia, Asthma is one of the ten most extensive diseases in Indonesia (2). Asthma requires good management. Fear of contracting Covid-19 has reduced asthmatics from accessing immediate care and increased adherence to control medications (12). Family involvement and support is an essential factor in the care of asthma patients during the Covid-19 pandemic. Family support helps clients make asthma care decisions during the Covid-19 pandemic (13,14). This study aims to explain the family experience in providing Asthma care during the Covid-19 pandemic.

2. Material and Method

The design of this research is a qualitative study with a content analysis approach. Participants in this study were three families in rural Indonesia who care for, or one of their family members has Asthma. Participants were divided into three criteria based on the age of people with Asthma, namely: respondents aged 5-11 years (children), respondents aged 26-50 years (adults), and respondents aged ≥ 56 (elderly). A purposive sampling technique was used in starting the interview. Data was collected using semi-structured interviews that focused on respondents with Asthma and their families. The time used for the interview is 45-60 minutes. Some questions include: How do you carry out the effect of asthma recurrence on the activities? What are you doing to prevent asthma recurrence that you suffered during the Covid-19 pandemic? Data analysis was carried out simultaneously with data collection. Data analysis was carried out with a content analysis approach including (1) transcripts of data from the interview results, (2) reading the entire script to get a comprehensive understanding of the content and determining the main unit and code, (3) abstracting the main unit and code, (4) unit classification and the same main code in a more general category, (5) determine the main theme (15).

3. Result

3.1. General participant information

The first participant is the mother of child A (8 years), who has had Asthma for almost two years. Participants both Mrs. S (47 years), who suffered from Asthma for 30 years since he was in high school (teenager). The third participant Mr. J (75 years), had Asthma for four months; apart from Asthma, Mr. J also suffered from heart disease, namely cardiomegaly, for almost one year.

The results of the study found three main themes, namely: family burdened and disrupted activities when Asthma relapsed, use a mask / keep your stamina/mind relaxed/stay away from the crowd as an effort to prevent Asthma during the Covid-19 pandemic, pharmacological and non-pharmacological treatments carried out by families during the pandemic Covid-19 (table 1).

3.2. The family is burdened, and the client's activities are disrupted

The theme of the family feeling burdened and the client's activity disrupted when Astma's disease recurs is constructed from a family that feels burdened, such as being tortured by difficult conditions when the client experiences a recurrence.

When it has relapsed, it will be like being tortured with difficult conditions " (Participant 1).

Apart from feeling burdened by the family, the client also feels disturbed in his activities when Astma's disease recurs and is also accompanied by weakness.

"Activity is disturbed. You are disturbed, right? Your energy is reduced" (Participant 2). "Yes, activities become a concern, sometimes yes ... accompanied by weakness" (Participant 3).

3.3. Use a mask / keep your stamina/mind relaxed/stay away from the crowd as an effort to prevent Asthma during the Covid-19 pandemic

This theme describes Astma's prevention efforts during the Covid-19 pandemic by wearing a mask outside the home, keeping the mind relaxed not to be stressed, managing adequate rest, and avoiding crowds.

”When Covid is like this, wear a mask (in Indonesian) ”(Participant 1). ”Don’t be too tired, especially those thoughts, don’t think too heavy” (Participant 2). ”You often wear a mask; you don’t hang out with other people” (Participant 3).

TABLE 1: Family experience in handling Asthma during the Covid-19 pandemic.

| Theme | Category | Sub Categories |
|--|---|--|
| The family is burdened, and the client’s activities are disrupted | The family is burdened | The family is burdened when the client experiences an asthma recurrence |
| | Interrupted activity | Activity is interrupted when Asthma recurs |
| Use a mask / keep your stamina/mind relaxed/stay away from the crowd as an effort to prevent Asthma during the Covid-19 pandemic | Using a mask | Wear a mask during Covid-19 |
| | Keep your stamina and mind relaxed | Keep your mind relaxed and control your activities, so you don’t get too tired |
| | Move away from the crowd | Wear a mask and stay away from the crowd |
| Pharmacological and non-pharmacological treatment in the management of Asthma during the Covid-19 pandemic | Control diet and rest | Use the inhaler, control food and rest, and see a doctor |
| | Using pharmacological and non-pharmacological drugs | Consuming salbutamol and turmeric |
| | Doing breathing exercises | Follow breathing exercises |
| | see a doctor | Get treatment |

3.4. Pharmacological and non-pharmacological treatment of Asthma

The handling efforts made by the three respondents in overcoming asthma recurrence were by taking pharmacological drugs (inhalers, salbutamol, carbide, dexamethasone

0.5 tablets, bromhexine HCL 8 mg, and fargoxom 0.25 mg) and consuming herbal medicines (turmeric with added eggs), always control activities, rest and eat a healthy lifestyle, and give more attention by doing regular health checks to the doctor. This can be proven by the statements of the three respondents as follows:

"... I use the device as an inhaler, take my child to a doctor, always provide medicine, and I go to the doctor regularly, his diet continues to rest so my child can't be tired" (Participant 1). "Always have salbutamol on hand" (Participant 2). "The effort is, of course, we will be treated like that, bro, besides that, yes, use an inhaler, mas" (Participant 3).

4. Discussion

In general, clients with asthma experience problems with their daily activities, especially when their Asthma is relapsing. The family feels burdened due to the disruption in these activities; Asthma can affect the patient's general health and employability. A person who has a history of asthma experiences limited activities, especially when doing work activities.

People with Asthma at the age of children experience disturbances in their activities, especially playing activities, considering that children's activities are dominated by play activities every day. According to Lam et al. (2016) (16) stated, the level of physical activity in children with Asthma was limited compared to their peers, but that Asthma did not prevent children from participating overall in any activity or even being more active than their peers. In addition to the activities undertaken, the effects of asthma treatment can also affect daily physical activity in children with Asthma. However, it cannot be denied that Asthma is most common in children; although Asthma can start at any age, most of it begins before school age due to genetic susceptibility and the incidence of viral infections (17).

People with Asthma in adults and the elderly also experience disturbances in their daily activities. However, activity disruption in adults and the elderly is different considering the third respondent is 75 years old whose activity is reduced due to physiological changes so that the family feels burdened in the process of supervision. This can be concluded that Asthma can result in the inhibited activity. In line with the statement Nejari et al. (2016) (18) that Asthma is a disabling disease in both children and adults regardless of age. This can create difficulties in doing some work for both adults and children and sometimes lead to illegality.

Clients with Asthma are currently more careful in carrying out their daily activities considering the current condition of the Covid-19 pandemic, which is not over yet.

Clients with Asthma wear masks when outside the home and avoid crowds to protect against the Covid-19 virus. Lam et al. (2016) (16) stated that people with Asthma are advised to maintain personal hygiene, including using a mask and maintaining a social distance of 2 m during the Covid-19 pandemic. In some asthma patients, wearing a face mask can cause difficulty breathing, but it is vital to wear a mask outside the home. However, it is better to choose a type of show that is easy to use for breathing so that optimal asthma control can be the best protection strategy for all asthma patients during the Covid-19 pandemic.

Also, clients with Asthma keep their minds relaxed, so they don't get stressed and manage adequate rest. This is done to maintain the body's resistance to minimize asthma recurrence during the Covid-19 pandemic. Djamil, Hermawan, Febriani, & Arisandi (2020) (2) stated that one of the triggers for asthma recurrence could be in the form of emotional turmoil/stress and fatigue due to physical activity. The stress experienced is often ignored by asthmatics, while stress can cause changes in the lungs' conditions that make Asthma possible. This causes the frequency of recurrences to become more frequent and can result in the patient falling into a bad state. According to Gautier & Charpin (2017) (19), stress can increase airway inflammation by modulating immune cell function via neural and hormonal pathways.

Clients always need pharmacological and non-pharmacological treatment with Asthma as an effort to overcome asthma recurrence. The pharmacological treatment uses inhalers and salbutamol (oral), while non-pharmacological uses medicinal plants such as turmeric mixed with chicken eggs as a medicinal herb. Fadzila, Bayhakki, & Indriati (2017) (20) stated that patients with Asthma always provide a variety of pharmacological drugs used for the treatment of Asthma in the form of tablets, syrups, and inhalers. According to Zazuli, Ramasamy, & Adnyana (2018) (21), Asthma medication is most often given, namely medicine through an inhaler that helps get the drug directly into the lungs' airways. Meanwhile, salbutamol is one of them Fast-acting β 2-agonists are the drugs of choice to treat acute asthma attacks with the usual doses. Still, asthma medication choice depends on the severity or severity of the disease (22).

Elderly clients with Asthma take carbide, dexamethasone 0.5 tablets, 8mg bromhexine HCL, and 0.25 mg fargoxom every day because the history of disease suffered by the third respondent is not only Asthma but also has a history of heart disease (cardiomegaly). Nejjari et al. (2016) (18) revealed that Asthma is not an uncommon disease in subjects aged 65 years and over. Asthma management in elderly patients is directed at controlling symptoms and reducing aggravating triggers. Particularly about older

patients, there are essential exacerbation factors, including comorbidities, appropriate drug use, drug-drug interactions, drug side effects, and physiological differences (23).

The use of drugs in the management of Asthma is known as controllers and relievers. Controllers are used in the type of medications taken daily on a long-term basis with anti-inflammatory effects. At the same time, the reliever is included in the types of drugs used during an asthma attack only to reduce symptoms (24). Udayani, Amin, & Makhfudli (2020) (25) revealed that pharmacological medications are beneficial when asthma recurrence occurs, but it has side effects if not controlling medication in long-term use. Therefore, it is necessary to use non-pharmacological therapies through physical activity and breathing exercises that are developed to complement pharmacological drugs in improving asthma control.

Non-pharmacological therapy used by clients with Asthma is by participating in breathing exercises that can relieve asthma recurrence symptoms. The reason for participating in breathing exercises is to try to reduce the use of drugs. In line with Evaristo et al. (2020) (26), breathing exercises are a non-pharmacological intervention that can improve asthma control and have been considered a vital adjuvant to medical treatment. These exercises have been widely used because they are low cost, easy to apply, and safe. Breathing exercises can reduce the number of drug use by 86%, and some asthma patients are instructed to use breathing exercises before taking synthetic drugs whenever asthma symptoms show.

Controlling diet and rest is also very important; besides the use of pharmacological and non-pharmacological drugs, the respondent's family tries to do the best possible to minimize the recurrence of Asthma by routinely carrying out medical examinations to the doctor. Effort Asthma control in children and adults is related to the knowledge that the family has. Apart from experience and medicine, the family also pays attention to the client's fitness so that Asthma can be controlled. Therefore, the family should consult a doctor about proper precautions when an asthma attack worsens (27). As stated by K. Kumar, Hinks, & Singanayagam (2020) (28) that family prevention efforts are essential in determining the chosen treatment therapy so that it can help improve asthma control.

Asthma in the elderly is generally poorly understood. Therefore, it is underdiagnosed or misdiagnosed and treated. The appropriate management of any chronic disease in the elderly, including Asthma, should include a multidimensional assessment (MDA) of the physical, psychological, cognitive, and social factors that can influence successful treatment (29). Apart from using family-supported drugs, it is also hoped that they will reduce the frequency of asthma recurrences. This support can be in the form of instrumental, informational, judgmental, and emotional support. So the family must have

some health knowledge of how attitudes and actions are carried out in dealing with asthma attacks and how to prevent these asthma attacks (30).

In general, people with Asthma experience an impaired immune response to viral infections in the respiratory tract that have the potential to trigger or worsen asthma symptoms (31). Morais-Almeida et al. (2020) (32) argued that the importance of keeping Asthma under control using appropriate medication. Also, treatment adherence is one of the factors that determine the success of treatment. Factors that influence asthma treatment's success include age, genetics, comorbid diseases, medications given, patient habits, and psychological and social conditions (22).

5. Conclusion

This study's findings describe the family's experience of caring for family members who had Asthma during the Covid-19 pandemic. There is a burden and limited activity when the disease recurs can be used as family anticipatory measures in overcoming this problem by cooperating between family members in providing care to patients. The family also has a vital role in limiting the patient's activities when the disease relapses. Further research can be developed to explore the experiences of Asthma patients during the Covid-19 pandemic.

Limitations

Treatment of people with Asthma during the Covid-19 pandemic has limited access to health service facilities. Also, families of people with Asthma need to be disciplined again to use masks, physical distancing, and other prevention efforts.

6. Conflicts of interest

There are no conflicts of interest.

Authors' contribution

FAP is the primary researcher in research design, data collection. YBP analyzed the data and compiled a manuscript for publication.

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Ethical Clearance

Ethical permission was obtained from the University of Muhammadiyah Malang. The study protocol was evaluated and approved by the IRB of the Faculty of Health Sciences. Written consent is taken from the child's parents. Confidentiality is also maintained by removing respondents' names and identities (both children and parents) because they are not relevant to the research. Furthermore, the study is in line with the Declaration of Helsinki.

References

- [1] Ethondor A. Depression and Anxiety Requiring Emergency Treatment Among Patients with Asthma at a Tertiary Health Care Center in Nigeria. *Journal of Global Bioscience*. 2020;9(2):6771–8.
- [2] Djamil A, Hermawan NS, Febriani F, Arisandi W. Febriani, Arisandi W. Faktor yang Berhubungan dengan Kekambuhan Asma pada Pasien Dewasa. *Journal of Wellness Health Mag*. 2020;2(1):29–40.
- [3] Ilpaj SM, Nurwati N. Analisis Pengaruh Tingkat Kematian Akibat Covid-19 Terhadap Kesehatan Mental Masyarakat Di Indonesia. *J Pekerj Sos*. 2020;3(1):16–28.
- [4] Siagian TH. Mencari Kelompok Berisiko Tinggi Terinfeksi Virus Corona dengan Discourse Network Analysis. *Jurnal Kebijakan Kesehatan Indonesia*. 2020;09(02):98–106.
- [5] Wulandari A, Rahman F, Pujiarti N, Sari AR, Laily N, Anggaraini L. Hubungan Karakteristik Individu dengan Pengetahuan tentang Pencegahan Coronavirus Disease 2019 pada Masyarakat di Kalimantan Selatan. *Jurnal Fakultas Kesehatan Masyarakat*. 2020;15(1):42–6.

- [6] Gates B. Responding to Covid-19 - A Once-in-a-Century Pandemic? *The New England Journal of Medicine*. 2020 Apr;382(18):1677–9.
- [7] Fadli S, Ahmad AS, Sumbara, Baharuddin R. Faktor yang Mempengaruhi Kecemasan pada Tenaga Kesehatan Dalam Upaya Pencegahan Covid-19. *Jurnal Pendidikan Keperawatan Indonesia*. 2020;6(1):57–65.
- [8] Prompetchara E, Ketloy C, Palaga T. Immune responses in COVID-19 and potential vaccines: lessons learned from SARS and MERS epidemic. *Asian Pacific Journal of Allergy and Immunology*. 2020 Mar;38(1):1–9.
- [9] Susilo A, Rumende CM, Pitoyo CW, Santoso WD, Yulianti M, Herikurniawan H, et al. Coronavirus Disease 2019: Tinjauan Literatur Terkini. *Jurnal Penyakit Dalam Udayana*. 2020;7(1):45.
- [10] Juwita L, Sary IP. Pernafasan Buteyko Bermanfaat Dalam Pengontrolan Asma. *Jurnal Real Nurs*. 2019;2(1):10–20.
- [11] Kartina Y, Djajalaksana S, Chozin IN, Al Rasyid H. Perbedaan Ekspresi miRNA-126 dan Interleukin (IL)-13 Pada Pasien Asma Terkontrol Penuh dan Tidak Terkontrol Penuh. *Jurnal Respirologi Indonesia*. 2020;40(1):24–32.
- [12] Taquechel K, Diwadkar AR, Sayed S, Dudley JW, Grundmeier RW, Kenyon CC, et al. Pediatric Asthma Health Care Utilization, Viral Testing, and Air Pollution Changes During the COVID-19 Pandemic. *Journal of Allergy and Clinical Immunology*. 2020;8(10):3378–3387.e11.
- [13] McGinn T, Best P, Wilson J, Chereni A, Kamndaya M, Shlonsky A. Family group decision-making for children at risk of abuse or neglect: A systematic review. *Campbell Systemic Review*. 2020 Sep;16(3). <https://doi.org/10.1002/cl2.1088>.
- [14] Zhang H. The Influence of the Ongoing COVID-19 Pandemic on Family Violence in China. *Journal of Family Violence*. 2020;(September):1–11.
- [15] Elo S, Kääriäinen M, Kanste O, Pölkki T, Utraiainen K, Kyngäs H. Qualitative Content Analysis. *SAGE Open*. 2014;4(1):215824401452263.
- [16] Lam KM, Yang YH, Wang LC, Chen SY, Gau BS, Chiang BL. Physical Activity in School-Aged Children with Asthma in an Urban City of Taiwan. *Pediatrics and Neonatology*. 2016 Aug;57(4):333–7.
- [17] Ding B, Lu Y. A Suggested Approach for Management of Pediatric Asthma During the COVID-19 Pandemic. *Frontiers in Pediatrics*. 2020 Sep;8:563093.
- [18] Nejjarri C, Tessier JF, Barberger-Gateau P, Jacqmin H, Dartigues JF, Salamon R. Functional status of elderly people treated for asthma-related symptoms: a population based case-control study. *European Respiratory Journal*. 1994 Jun;7(6):1077–83.

- [19] Gautier C, Charpin D. Environmental triggers and avoidance in the management of asthma. *Journal of Asthma and Allergy*. 2017 Mar;10:47–56.
- [20] Fadzila W, Bayhakki, Indriati G. Hubungan keteraturan penggunaan inhaler terhadap hasil asthma control test (act) pada penderita asma. *JURNAL ONLINE MAHASISWA*. 2017;5(2):831–9.
- [21] Zazuli Z, Ramasamy K, Adnyana IK. Evaluasi Teknik Penggunaan Inhaler pada Pasien Asma dan PPOK di Suatu Sarana Pelayanan Kesehatan Primer: Suatu Studi Pendahuluan di Selangor Malaysia. *Jurnal Manajemen dan Pelayanan Farmasi*. 2018;8(2):80–9.
- [22] Haryanti S, Ikawati Z, Andayani TM, Mustafa. Hubungan Kepatuhan Menggunakan Obat Inhaler β 2-Agonis dan Kontrol Asma pada Pasien Asma. *Jurnal Sains Farmasi & Klinis*. 2016;5(4):238–48.
- [23] Dunn RM, Busse PJ, Wechsler ME. Asthma in the elderly and late-onset adult asthma. *Allergy*. 2018 Feb;73(2):284–94.
- [24] Airlangga E. Imunoterapi pada Asma Anak. *Jurnal ilmiah Ibnu Sina Biomedika*. 2017;1(2):60–74.
- [25] Udayani W, Amin M, Makhfudli. Pengaruh Kombinasi Teknik Pernapasan Buteyko dan Latihan Berjalan terhadap Kontrol Asma pada Pasien Asma Dewasa. *Jurnal Keperawatan Indonesia*. 2020;6(1):7–13.
- [26] Evaristo KB, Mendes FA, Saccomani MG, Cukier A, Carvalho-Pinto RM, Rodrigues MR, et al. Effects of Aerobic Training Versus Breathing Exercises on Asthma Control: A Randomized Trial. *J Allergy and Clinical Immunology in Practice*. 2020 Oct;8(9):2989–2996.e4.
- [27] Dharmayanti I, Hapsari D, Azhar K. Asma pada anak di Indonesia: penyebab dan pencetus. *Jurnal Kesehat Masy Nas*. 2015;9(4):320–6.
- [28] Kumar K, Hinks TS, Singanayagam A. Treatment of COVID-19-exacerbated asthma: should systemic corticosteroids be used? *American Journal of Physiology-Lung Cellular and Molecular Physiology*. 2020 Jun;318(6):L1244–7.
- [29] Skloot GS, Busse PJ, Braman SS, Kovacs EJ, Dixon AE, Vaz Fragoso CA, et al.; ATS ad hoc Committee on Asthma in the Elderly. An official American thoracic society workshop report: Evaluation and Management of Asthma in the Elderly. *Annals of the American Thoracic Society*. 2016 Nov;13(11):2064–77.
- [30] Manurung N. Hubungan Fungsi Keluarga Bidang Kesehatan terhadap Relaps Penderita Asma Bronkhiale di Pantai Labu Deli Serdang. *Annals of the American Thoracic Society*. 2019;5(2):646–50.

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- [31] Liu S, Zhi Y, Ying S. COVID-19 and Asthma: Reflection During the Pandemic. *Clinical Reviews in Allergy and Immunology*. 2020 Aug;59(1):78–88.
- [32] Morais-Almeida M, Pité H, Aguiar R, Ansotegui I, Bousquet J. Asthma and the Coronavirus Disease 2019 Pandemic: A Literature Review. *International Archives of Allergy and Immunology*. 2020;181(9):680–8.