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# Filial Piety and Family Caregiver Coherence: Between Expectations and Reality in the Management of Type-2 Diabetes in Indonesia

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ABSTRACT

***Background:*** In Indonesia, managing chronic conditions, like type-2 diabetes (T2D), relies heavily on filial piety and caregiver coherence. Filial piety emphasizes respect and responsibility for caregiving family members, while caregiver coherence reflects alignment and collaboration among caregivers. Despite their importance, the relationship between these factors and T2D management remains unclear, necessitating further investigation. ***Purpose*****:** This study aimed to examine the relationship between filial piety values and family caregiver coherence among T2D patients, while exploring the influence of demographic factors on these variables. ***Methods*****:** Using an analytical descriptive design with a cross-sectional approach, 324 family caregivers from 14 Primary Health Centers (PHCs) in Malang City, Indonesia, were selected through cluster random sampling. Filial piety values were assessed using the Filial Family Scale (FFS), and family caregiver coherence was measured with the Sense of Coherence-13 (SOC-13) questionnaire. Spearman's rank correlation and multiple logistic regression were employed for statistical analysis. ***Results*****:** Findings revealed that 84% of respondents displayed high filial piety values, and 63.6% exhibited high family caregiver coherence. However, no significant correlation was identified between filial piety values and caregiver coherence ($p = 0.0124$, $r = 0.086$). Familial relationship factors emerged as the primary demographic influence on both variables. ***Conclusion*****:** Although no direct association was observed, the study highlights the continued importance of filial piety and caregiver coherence in T2D management. The prominence of familial relationships as an independent factor underscores their critical role in chronic disease care within Indonesian cultural settings. ***Implications for Nursing*****:** This study highlights the need for nurses to strengthen family relationships through culturally sensitive approaches that enhance filial piety and caregiver coherence to improve the effectiveness of type-2 diabetes management.

***Keywords:*** Caregivers, Indonesia, Coherence, Filial piety, Type-2 diabetes.

**What does this paper add?**

1. This study highlights the influence of cultural values, like filial piety and caregiver coherence, on diabetes care, offering globally relevant insights for culturally diverse healthcare settings.
2. The findings provide evidence to enhance family-centered strategies for type-2 diabetes management, particularly in resource-limited settings where family support is essential.
3. Identifying familial relationships as a key factor underscores the role of social and cultural determinants in shaping caregiving practices and improving patient outcomes.

**Introduction**

Type-2 diabetes (T2D) remains a significant global health concern, affecting millions of individuals worldwide. According to the International Diabetes Federation (IDF, 2021), it is estimated that 537 million adults were living with diabetes, a number projected to rise to 643 million adults by 2030. In Indonesia, the prevalence of diabetes is particularly alarming, with over 10.7 million individuals affected, placing the country among the top ten nations with the highest number of diabetes cases (Soeatmadji et al., 2023). The rising incidence of diabetes contributes to escalating healthcare costs and places a considerable burden on healthcare systems. This growing trend underscores the need for effective management strategies that extend beyond clinical interventions.

Managing T2D involves more than just medical treatment; family involvement in caregiving plays a critical role in patient well-being. In Indonesian culture, filial piety—a strong sense of respect and obligation toward parents and elder family members—shapes caregiving dynamics (Setiyani et al., 2019). However, the demands placed on family caregivers often create conflicts between cultural expectations and the practical realities of caregiving (Sherman, 2019). Such conflicts can result in stress, caregiver burnout, and sub-optimal diabetes management (Liu et al., 2020). Recent studies indicate that family-based support, especially when aligned with filial values, improves glycemic control, treatment adherence, and patient motivation (Doan et al., 2023; Feng et al., 2023; Mokhtari et al., 2023). The impact on both patients and caregivers highlights the urgency of addressing these challenges within the context of T2D management in Indonesia.

This study applies the family caregiving coherence framework, which focuses on the extent to which caregivers perceive consistency and harmony between their caregiving responsibilities, available resources, and cultural expectations (J. Wang et al., 2024). This framework highlights how well caregivers are able to comprehend caregiving demands, manage available support, and find meaning in their roles, which in turn influences their psychological resilience and caregiving performance. It is particularly useful for understanding how cultural values, such as filial piety, influence caregiving roles and the perceived coherence of family members' responsibilities (Xiao et al., 2024). By emphasizing the cognitive, emotional, and contextual alignment of caregiving tasks, the framework provides a comprehensive lens for examining how families adapt to chronic illness management. These theoretical perspectives provide a foundation for analyzing how caregivers navigate their roles and how cultural expectations affect both their well-being and the quality of care that they provide (Gupta et al., 2024).

A review of the literature indicates a growing body of research on family caregiving in the context of chronic illnesses (Setyoadi et al., 2024). However, few studies specifically addressed the intersection of cultural values and caregiver coherence (Subramaniam & Mehta, 2024). Existing research has explored caregiver burden and psychological stress, yet there is limited focus on how the cultural imperative of filial piety influences caregiving outcomes (Loo et al., 2022). Furthermore, most studies have been conducted in Western contexts, making it essential to examine these dynamics in regions like Indonesia, where familial obligations significantly influence caregiving practices (Widyastuti et al., 2023).

Despite previous research, there remains a gap in understanding how cultural expectations shape the coherence and effectiveness of caregiving in Indonesia (Febiyanti & Yulindrasari, 2021). Limited attention has been given to how caregivers reconcile traditional obligations of filial piety with the practical challenges of managing a chronic condition like T2D (Wu, 2023). Additionally, the impact of these dynamics on both caregiver well-being and patient outcomes is not well-documented. Addressing this gap is crucial to developing comprehensive studies that integrate cultural contexts into the analysis of caregiving practices.

The relevance of this research is evident given Indonesia's socio-cultural landscape, where traditional values intersect with modern healthcare challenges (Abdullah et al., 2023). As families play a central role in managing chronic conditions due to limited healthcare resources (Chow et al., 2024), understanding how they navigate these expectations becomes increasingly important (El-Haddad et al., 2020). This issue is particularly timely, as insights gained from such research can inform the development of supportive programs that help caregivers manage their roles effectively without compromising their well-being or the patients' health.

The primary objective of this study is to examine the relationship between filial piety values and family

caregiver coherence among T2D patients, while exploring the influence of demographic factors on these variables. By exploring this coherence, the research aims to provide insights that can guide interventions tailored to culturally specific needs, supporting caregivers in balancing expectations with practical realities. The findings are expected to contribute to both academic literature and practical solutions, enhancing caregiver support programs and informing policy development to improve diabetes management in Indonesia.

## Methods

### Design

This study employed an observational design with an analytical correlational approach. It was a quantitative study utilizing a cross-sectional method, which allows for the assessment of relationships between variables at a single point in time. This design is particularly effective for identifying associations and determining the prevalence of certain factors within a defined population, making it suitable for understanding influences on variables, such as filial piety and family caregiver coherence, in the context of T2D care.

### Setting and Sample

This study was conducted across all Public Health Centers (PHCs) in the city of Malang, East Java Province, Indonesia, consisting of 16 PHCs. However, only 14 PHCs were willing to participate in the data collection, as 2 PHCs were undergoing accreditation evaluations. The study was carried out over one month, from August 8, 2023, to September 8, 2023. The population in this study consisted of all family caregivers caring for family members with T2D. According to data from the Malang City Health Department in 2022, a total of 24,984 people were reported to have T2D, with an average of 2,082 cases per month.

The sample size was calculated using the Isaac and Michael formula with a 5% margin of error, resulting in a target of 324 family caregivers. The sampling technique used was cluster random sampling. Recruitment was conducted with assistance from community health volunteers (*kader*) and PHC staff. Eligible caregivers were identified from chronic disease (Prolanis) patient lists maintained at each PHC. After initial identification, caregivers were approached either during routine clinic visits or contacted by phone. A total of 368 family caregivers were approached, of which 324 agreed to participate, resulting in a response rate of 88.0%.

The inclusion criteria for caregivers were: living in the same household as a T2D patient, having a family relationship (by blood, adoption, or marriage), being at least 17 years old, and being able to communicate verbally. The exclusion criteria included caregivers who were ill or had health conditions (e.g. tuberculosis, diabetes, hypertension, stroke), those aged over 60 years, and individuals unwilling to participate.

### Measurement and Data Collection

This study utilized a research instrument consisting of three sections: a socio-demographic questionnaire, the Filial Family Scale (FFS) questionnaire, and the Sense of Coherence-13 (SOC-13) questionnaire. The socio-demographic questionnaire for family caregivers included questions on age, gender, religion, last level of education, tribe, occupation, wage, relationship with the client, duration of caregiving, family type, and family development.

In this study, filial piety was assessed using the Filial Family Scale (FFS), a validated tool designed to evaluate the strength and quality of intergenerational family relationships, including perceived support among family members. The FFS consists of 28 items that identify three key concepts of filial devotion: responsibility, respect, and care, each rated using a Likert scale where respondents indicate their level of agreement with each statement, ranging from strongly disagree (1), disagree (2), agree (3), and strongly agree (4). Scoring for the filial values survey ranges from a minimum score of 28 to a maximum score of 112, with the scores categorized as follows: high filial values (75-112), moderate filial values (38-74), and low filial piety (28-37). The filial values questionnaire underwent a validity and reliability test with 10 respondents, using a significance level of 5%. The validity test results showed that the filial values questionnaire in this study had a calculated r value ranging from 0.635 to 0.966, while the r table value for 10 respondents was 0.632. It can be concluded that all questions related to filial values in the questionnaire are valid. The reliability test results for the questionnaire on filial values indicated a Cronbach's alpha coefficient of 0.927, which is greater than 0.600. This confirms that the questionnaire is

reliable. A Cronbach's alpha value above 0.600 is typically considered acceptable, and a value of 0.927 suggests excellent internal consistency, indicating that the items within the questionnaire are measuring the same underlying construct consistently.

The Sense of Coherence-13 (SOC-13) scale is a concise version of the original scale developed by Aaron Antonovsky to assess individuals' perceptions of life and their ability to manage stress. Comprising 13 items, the SOC-13 scale measures the sense of coherence through three main components: comprehensibility, manageability, and meaningfulness. Each item on the scale is rated using a Likert scale, where respondents indicate their level of agreement or the frequency of their experiences. The response options typically range from 1 (never), 2 (rarely), 3 (sometimes), 4 (often), to 5 (always). The scoring for the SOC-13 survey ranges from a minimum score of 13 to a maximum score of 65, with the scores categorized as follows: good family coherence (46-65), moderate family coherence (31-45), and low family coherence (15-30). The filial values questionnaire underwent a validity and reliability test with 10 respondents, using a significance level of 5%. The validity test results for the coherence questionnaire showed that the calculated correlation coefficients (r) ranged from 0.648 to 0.854. Given that the r-table value for 10 respondents is 0.632, it can be concluded that all items in the coherence questionnaire are valid. Additionally, the reliability test yielded a Cronbach's alpha coefficient of 0.957, which is greater than 0.600. This indicates that the coherence questionnaire is reliable. The high Cronbach's alpha value signifies excellent internal consistency, ensuring that the items consistently measure the intended construct.

**Data Analysis**

Uni-variate analysis was conducted for each research variable to describe the distribution of respondents' socio-demographic characteristics, which were presented in frequency distribution tables. Bi-variate analysis was conducted using the Spearman's rank test to examine the relationship between filial piety and family caregiver coherence. Spearman's rank was selected due to the non-parametric nature of the data and the use of ordinal scales in both the Filial Family Scale (FFS) and Sense of Coherence-13 (SOC-13) instruments, which did not meet the assumptions of normality required for parametric tests. Multi-variate analysis was conducted using multiple logistic regression to explore the influence of socio-demographic factors on both filial piety and caregiver coherence. Logistic regression was used instead of multiple linear regression, because the outcome variables were categorized into ordinal levels (e.g. high, moderate, low) rather than treated as continuous total scores, making logistic modeling more appropriate for analyzing categorical outcomes. All analyses were performed using IBM SPSS Statistics, version 26, with the significance level set at $p < 0.05$.

**Ethical Considerations**

This study adhered to research procedures based on ethical principles and was reviewed by the Research Ethics Committee of the Faculty of Health Sciences, Universitas Brawijaya, under approval number 5036/UN10.F17.01/PT.01.04.3/2023 and Ethical Approval Statement number 4375/UN10.F17.10.4/TU/2023.

**Results**

**Table 1. Socio-demographic characteristics of family caregivers of patients with T2D**

| Socio-demographic characteristic | f | % |
|---|---|---|
| **Age (years)** | | |
| 17-19 | 1 | 0.3 |
| 20-44 | 198 | 61.1 |
| 45-59 | 125 | 38.6 |
| **Gender** | | |
| Male | 96 | 29.6 |
| Female | 228 | 70.4 |
| **Religion** | | |
| Moslem | 314 | 96.9 |
| Non-Moslem | 10 | 3.1 |

| | | |
|---|---|---|
| **Education** | | |
| No School | 9 | 2.8 |
| Elementary School | 39 | 12 |
| Junior High School | 45 | 13.9 |
| Senior High School | 156 | 48.1 |
| College | 75 | 23.1 |
| **Tribe** | | |
| Java | 310 | 95.7 |
| Non-Java | 14 | 4.3 |
| **Employment** | | |
| Unemployed | 126 | 38.9 |
| Government employee | 28 | 8.6 |
| Laborer | 94 | 29 |
| Entrepreneur | 76 | 23.5 |
| **Wage (Rp. 3.100.000,00)** | | |
| Above Standard | 38 | 11.7 |
| Below Standard | 286 | 88.3 |
| **Relationship** | | |
| Parent | 43 | 13.3 |
| Spouse | 124 | 38.3 |
| Child | 140 | 43.2 |
| Sibling | 17 | 5.2 |
| **Duration of Caregiving** | | |
| > 5 Years | 88 | 27.2 |
| <5 Years | 236 | 72.8 |
| **Family Type** | | |
| Nuclear | 237 | 84.3 |
| Extended | 51 | 15.7 |
| **Family Development** | | |
| Families with Adolescents | 80 | 24.7 |
| Middle-age Families | 176 | 54.3 |
| Aging Families | 68 | 21 |

Based on the data presented in Table 1, most family caregivers for patients with type-2 diabetes (T2D) are aged between 20 years and 44 years, with a total of 198 individuals (61.1%). Female caregivers constitute 228 individuals (70.4%). The predominant religion among caregivers is Islam, encompassing 314 individuals (96.9%). The highest level of educational attainment is high school or an equivalent qualification, represented by 156 individuals (48.1%). Javanese caregivers make up 310 individuals (95.7%) of the total. In terms of employment status, 128 caregivers (38.9%) are unemployed, while 286 individuals (88.3%) report incomes below standard. Regarding familial relationships, 140 caregivers (43.2%) are the children of the patients. The caregiving duration for most individuals is less than five years, totaling 236 individuals (72.8%). Moreover, the majority of caregivers are part of nuclear families, with 273 individuals (84.3%), and those identified as members of middle-aged families amount to 176 individuals (53.4%).

**Table 2. Distribution of filial piety and family caregiver coherence of patients with T2D**

| Variables | f | % |
|---|---|---|
| **Filial piety** | | |
| High | 272 | 84 |
| Moderate | 52 | 16 |
| **Coherence** | | |
| High | 206 | 63.6 |
| Moderate | 116 | 35.8 |
| Low | 2 | 0.6 |

The data presented in Table 2 indicates that the majority of family caregivers for patients with type-2 diabetes (T2D) exhibit high levels of filial piety, with 272 individuals (84%) classified in this category. Meanwhile, 52 individuals (16%) fall into the moderate category. In terms of caregiver coherence, 206 individuals (63.6%) are categorized with high coherence, 116 individuals (35.8%) with moderate coherence, and only 2 individuals (0.6%) are classified with low coherence.

**Table 3. Results of the analysis between filial piety values and family caregiver coherence of patients with T2D**

| Filial piety | Coherence | | | p-value | r |
|---|---|---|---|---|---|
| | High | Moderate | Low | | |
| | f (%) | f (%) | f (%) | 0.124 | 0.086 |
| **High** | 78 (65.4) | 92 (33.8) | 2 (0.7) | | |
| **Moderate** | 28 (53.8) | 24 (46.2) | 0 (0) | | |

The data presented in Table 3 indicates that among caregivers exhibiting high filial piety, 178 individuals (65.4%) also demonstrate high levels of family caregiver coherence, while only 2 individuals (0.7%) fall into the low-coherence category. This pattern suggests that higher filial piety values may be associated with greater caregiver coherence. However, the results of the bi-variate analysis indicate no significant relationship between filial piety and family caregiver coherence among caregivers of family members with type-2 diabetes mellitus ($N = 234$; $\alpha = 0.05$; $p = 0.124$).

**Table 4. Demographic factors affecting filial piety and family caregiver coherence**

| Variables | B | SE | OR | 95% CI | p-value |
|---|---|---|---|---|---|
| **Filial piety** | | | | | |
| Age | 0.045 | 0.018 | 1.05 | 1.01 - 1.09 | 0.025* |
| Gender | 0.612 | 0.220 | 1.84 | 1.19 - 2.83 | 0.008* |
| Religion | 0.410 | 0.197 | 1.51 | 1.03 - 2.20 | 0.038* |
| Education | 0.330 | 0.160 | 1.39 | 1.04 - 1.87 | 0.029* |
| Tribe | 0.250 | 0.230 | 1.28 | 0.81 - 2.03 | 0.278 |
| Employment | 0.450 | 0.195 | 1.57 | 1.09 - 2.26 | 0.014* |
| Wage | 0.025 | 0.012 | 1.03 | 1.01 - 1.05 | 0.031* |
| Relationship | 0.721 | 0.258 | 2.06 | 1.25 - 3.41 | 0.006* |
| Duration of Caregiving | 0.028 | 0.013 | 1.03 | 1.00 - 1.06 | 0.048* |
| Family Type | 0.300 | 0.210 | 1.35 | 0.90 - 2.03 | 0.148 |
| Family Development | -0.250 | 0.215 | 0.78 | 0.52 - 1.18 | 0.232 |

| | | | | | |
|---|---|---|---|---|---|
| **Coherence** | | | | | |
| Age | 0.035 | 0.015 | 1.04 | 1.01 - 1.08 | 0.020* |
| Gender | 0.472 | 0.195 | 1.61 | 1.09 - 2.38 | 0.016* |
| Religion | 0.300 | 0.175 | 1.35 | 0.96 - 1.90 | 0.085 |
| Education | 0.400 | 0.150 | 1.49 | 1.10 - 2.02 | 0.012* |
| Tribe | 0.220 | 0.210 | 1.25 | 0.82 - 1.91 | 0.272 |
| Employment | 0.350 | 0.180 | 1.42 | 0.99 - 2.02 | 0.056 |
| Wage | 0.030 | 0.011 | 1.03 | 1.01 - 1.06 | 0.040* |
| Relationship | 0.650 | 0.239 | 1.92 | 1.18 - 3.13 | 0.008* |
| Duration of Caregiving | 0.020 | 0.012 | 1.02 | 0.99 - 1.05 | 0.210 |
| Family Type | 0.270 | 0.190 | 1.31 | 0.92 - 1.87 | 0.158 |
| Family Development | -0.200 | 0.215 | 0.82 | 0.54 - 1.24 | 0.320 |

The data in Table 4 indicates that demographic factors, such as age, gender, religion, education, employment status, wage, relationship with the patient, and duration of caregiving, significantly influence filial piety among caregivers ($p < 0.05$). Similarly, age, gender, education, wage, and duration of caregiving were found to be significant demographic factors affecting family caregiver coherence ($p < 0.05$). A comprehensive demographic analysis reveals that the caregiver's relationship with the patient plays a particularly prominent role in influencing both filial piety and family caregiver coherence, with odds ratios (OR) of 2.06 and 1.92, respectively.

**Discussion**

This study aimed to explore the relationship between filial piety values and family caregiving coherence among caregivers of patients with type-2 diabetes (T2D) in Indonesia. The findings indicate that the majority of family caregivers exhibit high filial piety values and relatively high levels of caregiving coherence. However, the correlation between filial piety and coherence was not statistically significant. These results provide important insights when interpreted within the framework of family caregiving coherence, which emphasizes how caregivers perceive and make sense of their caregiving role.

The family caregiving coherence framework conceptualizes coherence as the caregiver's ability to perceive caregiving as meaningful, comprehensible, and manageable. This psychological construct influences how caregivers cope with the demands and challenges inherent in providing care (Antonovsky, 1987). In this study, high filial piety values reflect a strong cultural commitment to family responsibility, rooted in Indonesian social norms and traditions (Q. Wang et al., 2023). Nonetheless, the variability in coherence levels suggests that not all caregivers successfully translate these cultural values into effective coping mechanisms and caregiving strategies.

The absence of a significant correlation between filial piety and coherence suggests that while cultural values provide motivation and a normative framework for caregiving, they do not automatically ensure that caregivers perceive their role as coherent or manageable (Ng et al., 2016). This distinction is critical, because caregiving coherence relates to the caregiver's internal cognitive and emotional processes, which affect resilience and caregiving outcomes (Q. Wang et al., 2023). Thus, filial piety may serve as a foundational value that supports caregiving motivation, but coherence reflects the caregiver's adaptive capacity to sustain caregiving over time.

Importantly, this study deliberately focused on the interplay between cultural values and caregiving coherence without extending the discussion to broader socio-economic or systemic factors, such as caregiver stress, economic hardship, or access to healthcare services. Although these factors are often highlighted in caregiving literature (Jia et al., 2025; Pan et al., 2022), their inclusion would have expanded the scope beyond the study's objectives and data. Instead, the discussion remains tightly aligned with the study's aim to elucidate how cultural values and psychological coherence interact within family caregiving contexts in Indonesia. This approach ensures that the discussion is grounded in the data and theoretical framework presented in the introduction and methods sections. By maintaining this focus, the study avoids overgeneralization and preserves analytical clarity. It also highlights the unique

contribution of examining caregiving through the lens of cultural values and coherence, which is particularly relevant in collectivist societies where family obligations are deeply embedded in social norms (Zarzycki et al., 2023).

The demographic variables included in the study, such as familial relationship, age, and gender, were treated as descriptive contextual factors rather than primary explanatory variables. Among these, the familial relationship emerged as the most influential demographic factor associated with both filial piety and coherence (Zeng & Li, 2024). This finding underscores the importance of kinship ties and relational closeness in shaping caregiving experiences and perceptions (Pharr et al., 2014). For example, caregivers who are children or spouses may experience and interpret their caregiving roles differently, which can influence both their cultural motivations and their sense of coherence (Zarzycki et al., 2023). The findings suggest that interventions aimed at supporting family caregivers should consider both cultural and psychological dimensions (Bongelli et al., 2024). Nursing and healthcare professionals can enhance caregiving coherence by helping caregivers find meaning and manageability in their roles (Busebaia et al., 2023), perhaps through culturally sensitive education (Niño-de-Guzman Quispe et al., 2023), counseling, and support groups that reinforce filial values while also building coping skills (Setyoadi et al., 2023). Such interventions could improve caregiver well-being and, ultimately, patient outcomes.

Moreover, understanding caregiving coherence within the cultural context of filial piety has practical implications for health policy and program development in Indonesia and similar collectivist societies (Novianti et al., 2023). Policies that recognize and support the family as a primary caregiving unit, while also addressing caregivers' psychological needs, may be more effective than those focusing solely on material or medical support (Purba et al., 2023).

It is also important to acknowledge the limitations of this study. The cross-sectional design restricts causal inferences, and the reliance on self-reported measures may introduce bias. Additionally, by excluding broader socio-economic factors from the analysis and discussion, the study may not capture the full complexity of caregiving experiences. Future research could build on these findings by integrating multi-dimensional models that include economic, social, and healthcare system variables alongside cultural and psychological factors (Jia et al., 2025).

In conclusion, this study contributes to the growing body of knowledge on family caregiving by highlighting the nuanced relationship between cultural values and caregiving coherence. While filial piety remains a strong motivational force in Indonesian family caregiving, it does not necessarily guarantee that caregivers experience their roles as coherent or manageable. Recognizing this distinction is crucial for developing targeted interventions that support caregivers both culturally and psychologically. By focusing on the family caregiving coherence framework within the cultural context, this research provides a focused and relevant understanding that aligns with the study's scope and enriches the discourse on caregiving in collectivist societies (Subramaniam & Mehta, 2024; Lee & Connor, 2020).

**Implications for Nursing**

The practical implication for nursing practice is the urgent need to strengthen structured support systems that compensate for weakened traditional support. Nurses must go beyond cultural sensitivity by assessing caregiver burden regularly and tailoring interventions based on individual caregiver needs and capacities. This includes implementing stress-reduction programs, caregiver support networks, and training modules that enhance problem-solving and decision-making. Moreover, integrating caregiver well-being assessments into routine nursing evaluations will allow timely referrals to mental health or respite care services, especially in low-resource settings. These strategies, when combined with efforts to reinforce positive cultural values, may help improve the coherence and sustainability of caregiving practices.

**Limitations**

This study primarily examines socio-demographic factors, without deeply exploring psychological and emotional influences on caregiver coherence. Additionally, its cross-sectional design limits the ability to establish causal relationships between filial piety and caregiving outcomes. The study's geographical focus on a single urban area further restricts its generalizability, as caregiving norms and resource availability may differ significantly in rural communities. Future research should adopt longitudinal designs and include diverse

regional contexts to provide a more comprehensive understanding. Another limitation is the exclusion of caregiver health status, which plays a crucial role in caregiving effectiveness. Caregivers experiencing chronic stress or health issues may exhibit varying levels of coherence and caregiving capacity. Moreover, the reliance on quantitative data may not fully capture the complexities of caregiving experiences. Integrating qualitative methods, such as in-depth interviews or ethnographic approaches, could offer richer insights and a more holistic perspective on caregiving dynamics.

**Conclusions and Recommendations**

This study found no significant correlation between filial piety and family caregiver coherence in managing type-2 diabetes mellitus (T2D) in Indonesia. Instead, socio-demographic factors, such as age, gender, education, employment, and caregiving duration, played a more significant role. While filial piety remains culturally important, its practical impact on caregiving is influenced by stress, financial constraints, and limited healthcare access. To enhance caregiver well-being and diabetes management, several recommendations are proposed. This study emphasizes that cultural values, like filial piety, although important, must be supported by practical and systemic interventions to yield positive caregiving outcomes. For nursing professionals, this means prioritizing interventions that reduce caregiver stress and enhance coherence, regardless of filial obligation levels. By implementing holistic and culturally grounded care models, nurses can help optimize chronic disease management within families and support long-term caregiving sustainability. Future research should explore caregiving dynamics through longitudinal and qualitative studies, particularly in rural and culturally diverse settings. By addressing these challenges, healthcare providers and policymakers can develop more effective interventions to support family caregivers and improve chronic disease management.

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**Conflict of Interests**

The authors declare that they have no known or potential competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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