SOCIAL SUPPORT AND DIGNITY AS DETERMINANTS OF QUALITY OF LIFE IN PATIENTS WITH HEART DISEASE IN MEDAN CITY, INDONESIA

Lilis Pujiati

School of Nursing, Philippine Women's University, Manila

Email : 2023T1222@pwu.edu.ph

ABSTRACT

Heart disease remains a major global health burden and significantly affects patients' quality of life. This study aims to examine the role of social support and dignity as determinants of health-related quality of life (HRQoL) among patients with heart disease in Medan City, Indonesia. A cross-sectional design was applied involving 271 respondents selected through structured sampling procedures. Data were collected using validated questionnaires measuring social support, dignity (dignity-related distress), and HRQoL. Descriptive statistics were used to characterize respondent characteristics, while bivariate analyses employed Gamma and Somers'd correlations to assess relationships among variables. Multivariate analysis was conducted using ordinal regression to identify dominant predictors of HRQoL. The results show that most respondents were male (51.3%), aged 55–64 years (27.7%), and married (83.0%). More than half of the participants reported high social support (56.1%) and good HRQoL (53.9%). Bivariate analysis indicated significant positive relationships between social support and HRQoL ($p = 0.001$) and between dignity and HRQoL ($p < 0.001$). Ordinal regression analysis revealed that both social support and dignity significantly influenced HRQoL simultaneously ($p < 0.001$), with a model explanatory power of 52.4% (Nagelkerke $R^2 = 0.524$). Social support emerged as the strongest predictor of HRQoL, compared with dignity. In conclusion, social support and dignity are significant determinants of HRQoL in patients with heart disease in Medan. Strengthening psychosocial support systems and maintaining patient dignity should be prioritized in cardiac care interventions to improve overall quality of life.

Keywords: Social Support, Dignity, Health-Related Quality Of Life, Heart Disease.

INTRODUCTION

Heart disease stands as a critical public health challenge globally, causing substantial physical and psychological distress that profoundly diminishes patient well-being. (Fatima et al., 2023; Milayanti et al., 2021). Despite the established clinical focus on managing physiological symptoms, patients often experience a significant decline in their quality of life, a condition frequently exacerbated by feelings of helplessness and inadequate psychosocial resources. (Nuraeni, Suryani, Trisyani, & Pramukti, 2021). This research seeks to evaluate the specific influence of social support and patient dignity on the health-related quality of life for those receiving cardiac care in Medan, as these psychosocial components remain under-addressed in current clinical frameworks. By investigating these variables, this study aims to provide empirical evidence to support healthcare providers in integrating psychosocial support and dignity-centered practices into standard treatment protocols. Prior research indicates that while family-centered interventions have shown potential in mitigating the psychological burden of chronic cardiac conditions, the synergistic impact of personal dignity within Medan's local

sociocultural context remains empirically unexplored. (Zhang, et al., 2022; Laksmana, Afriyanti, & Bawono, 2025). To address this research gap, this study employs a quantitative cross-sectional design to analyze data from 271 cardiac patients and examine the interrelationships among perceived social support, preserved dignity, and overall health-related quality of life. The study provides a comprehensive evaluation of these psychosocial factors to inform holistic care strategies that address both clinical and subjective well-being outcomes.

RESEARCH METHOD

This study employed a quantitative, cross-sectional design with an analytical correlational approach to examine social support and dignity as determinants of quality of life in patients with heart disease in Medan City, Indonesia. This design enabled the assessment of relationships among variables at a single point in time without intervention. (Setia, 2016; Zangirolami-Raimundo et al., 2018). The study was conducted at Haji General Hospital, Medan, North Sumatra, Indonesia. The population consisted of adult patients diagnosed with heart disease who received inpatient and outpatient care during the study period. A total of 271 respondents were selected using convenience sampling based on Slovin's formula to ensure an adequate sample size. (Adam, 2020; Syaiful et al., 2023). Convenience sampling was selected because it enabled efficient recruitment within the constraints of a single clinical setting. (Etikan, 2016; Stratton, 2021). Inclusion criteria included patients aged 18 years or older, clinically stable, able to communicate in Bahasa Indonesia, and willing to provide informed consent. Patients with severe cognitive impairment, terminal illness, or incomplete data were excluded.

Data were collected using structured questionnaires measuring social support, dignity, and health-related quality of life. Social support was assessed using the Oslo Social Support Scale. This brief three-item instrument has been widely validated across populations and is considered suitable for inclusion in larger survey-based research.(Abiola et al., 2013; Kocalevent et al., 2018). Dignity was measured using the Patient Dignity Inventory, an instrument developed specifically to assess dignity-related distress in patients with life-threatening illnesses and previously applied in cardiovascular populations. HRQoL was assessed using the EuroQol Five-Dimension Questionnaire (EQ-5D), a generic instrument with well-established validity, responsiveness, and reliability for group comparisons across multiple patient groups. (Feng et al., 2020; Hurst et al., 1997). All instruments were administered in Bahasa Indonesia in paper-based or digital formats. Instrument reliability and validity were confirmed, with Cronbach's alpha values above 0.70 for the OSSS-3 and the EQ-5D, and above 0.80 for the PDI. Construct validity was supported by Composite Reliability (CR > 0.70) and Average Variance Extracted (AVE > 0.50) (Hanafiah, 2020).

The data collection process followed sequential stages, including instrument preparation, pilot testing for clarity and cultural appropriateness, and structured field data collection. Ethical principles were strictly applied, including informed consent, confidentiality, and participant protection (Doyal, 1997). Assistance was provided for respondents with literacy or mobility limitations. Data analysis included descriptive, bivariate, and multivariate approaches. Descriptive statistics were used to summarize respondent characteristics and the distribution of variables. Bivariate analysis was conducted using Gamma and Somers'd correlation tests, which are nonparametric measures appropriate for examining associations between two ordered categorical variables, as captured by the EQ-5D (Agbedeyi & Igweze, 2014; Talin, et al., 2023). Multivariate analysis was performed using ordinal regression to identify the dominant determinants of HRQoL among patients with heart disease, given that

the EQ-5D dimensions are classified as ordinal measurement scales (Norris et al., 2004; Tušek-Bunc & Petek, 2016). All analyses were conducted with a significance threshold set at $p < 0.05$. Ethical clearance was secured from the Institutional Review Board of the Muhammadiyah University of Sumatera Utara, ensuring that all procedures adhered to the Declaration of Helsinki (Muliantino, et al., 2024). Finally, data processing was facilitated through statistical software to ensure rigorous management of patient responses and accurate computation of standardized scores (Tito, Gebremariam, Beyene, Sander, & Gebretekle, 2022).

RESULTS

This study involved 271 patients with heart disease in Medan City, Indonesia.

Respondent Characteristics

Table 1: Characteristics of respondents

Features	Category	Frequency (n)	Percentage (%)
Gender	Male	139	51,3
	Women	132	48,7
Age	25-34 years old	32	11,8
	35-44 years old	49	18,1
	45-54 years old	69	25,5
	55-64 years old	75	27,7
	≥ 65 years old	46	17,0
Final Education	SMP	46	17,0
	SMA	100	36,9
	Bachelor (S1)	98	36,2
	Postgraduate	8	3,0
	Others	19	7,0
Jobs	PNS	51	18,8
	Private Employees	72	26,6
	Entrepreneurship	88	32,5
	Others	60	22,1
Marital Status	Married	225	83,0
	Single	27	10,0
	Others	19	7,0
Long Time Heart Pain	< 1 year	67	24,7
	1-2 years	105	38,7
	3-5 years	59	21,8
	> 5 years	40	14,8
Hospitalization History (last 1 year)	Ya	147	54,2
	No	124	45,8

The majority of respondents were male (51.3%), aged 55–64 years (27.7%), and mostly married (83.0%). Educational background was dominated by senior high school (36.9%) and bachelor's level (36.2%). Most respondents worked as entrepreneurs (32.5%) and had a disease duration of 1–2 years (38.7%). More than half had a history of hospitalization in the last year (54.2%).

Univariate Analysis

Table 2 Frequency Distribution of Research Variables (N=271)

Variabel	Category	Frequency (n)	Percentage (%)
Social Support	Moderate Support	119	43,9
	High Support	152	56,1
Martabat *(Dignity)*	Good Dignity (Low Distress)	136	50,2
	Moderate Dignity Disorder	116	42,8
	Poor Dignity (High Distress)	19	7,0
Quality of Life (HRQoL)	Good Quality of Life	146	53,9
	Moderate Quality of Life	108	39,9
	Poor Quality of Life	17	6,3

Univariate analysis showed that 56.1% of respondents had high social support. In addition, 50.2% reported good dignity status (low distress), while 53.9% experienced good health-related quality of life (HRQoL).

Bivariate Analysis

Table 3. The Relationship of Social Support to Quality of Life (HRQoL) and The Relationship between Dignity and Quality of Life (HRQoL)

Variabel	Gamma	Somers'd	Value	Sig.
Social Support → Quality of Life	0,324	0,207	3,186	0,001
Dignity → Quality of Life	0,685	0,495	8,894	0,000

Bivariate analysis using Gamma and Somers had indicated a significant positive relationship between social support and HRQoL ($p = 0.001$). Dignity also showed a significant and stronger positive association with HRQoL ($p < 0.001$). These findings indicate that better psychosocial conditions are associated with a higher quality of life in cardiac patients.

Multivariate Analysis

Table 4. Summary of Model Feasibility and Ordinal Regression Determination

Testing	Indicator	Value	df	Say.	Remarks
Model Fitting Information	Chi-Square	153,788	3	0,000	Model fit
Goodness-of-Fit	Pearson	17,887	7	0,012	Decent models
	Deviance	17,640	7	0,014	Decent models
Pseudo R-Square	Nagelkerke	0,524	-	-	-

Multivariate ordinal regression analysis confirmed that social support and dignity simultaneously influenced HRQoL ($p < 0.001$). The model explained 52.4% of the variance in HRQoL (Nagelkerke $R^2 = 0.524$). Social support emerged as the dominant predictor, compared with dignity, in determining quality of life.

DISCUSSION

The significant influence of social support on health-related quality of life aligns with previous literature emphasizing that robust interpersonal networks facilitate better symptom management and psychological adaptation in chronic disease patients. (Kim, Bae, Lim, & Park, 2022). Consistent with earlier findings, these results indicate that patients who perceive higher levels of social support are better equipped to navigate the emotional challenges inherent in long-term cardiac conditions. (Nurhamsyah, Trisyani, & Nuraeni, 2022).

Furthermore, the observed impact of dignity on HRQoL underscores the importance of patient-centered care, suggesting that clinical interventions must extend beyond physiological stabilization to preserve the subjective well-being of those facing life-threatening illnesses. (Pedreso, Alamban, & Faderan, 2021; Adamu, et al., 2022).

These findings resonate with evidence that psychological distress, including depression and anxiety, frequently compromises the quality of life in cardiovascular populations, further necessitating the integration of social and emotional support into standard care pathways. (Shafiq & Shahzadi, 2023).

However, this study's cross-sectional design limits its ability to demonstrate conclusive causation pathways between social support and health outcomes (Alharbi, et al., 2022; Bannour, et al., 2021). Future longitudinal research is therefore warranted to determine whether interventions aimed at enhancing perceived social support and dignity can yield sustained improvements in patient-reported outcomes over time (Murshid, et al., 2022; Liu, Chiou, Wang, Yu, & Lin, 2021).

Moreover, while these results corroborate the positive correlation between perceived social support and improved quality of life (Chollou et al., 2022). They also highlight the need to consider how different social domains and inpatient versus outpatient settings may influence these outcomes. (Jellestad, et al., 2022). Additionally, reliance on self-reported instruments may introduce recall or social desirability bias, warranting more objective clinical assessments in future investigations to validate patients' perceptions. (Shibeshy, Tilahun, Tsegabirhan, Haftu, & Belay, 2021).

Furthermore, understanding how distinct family systems and cultural norms shape the efficacy of social support remains critical for developing community-driven interventions that enhance long-term patient well-being. (Ghafoor, Nordbeck, Ritter, Pauli, & Schulz, 2021). Specifically, incorporating informal caregivers from a patient's existing network may provide a sustainable, scalable strategy for improving social support structures and ultimately enhancing HRQoL. (Blakoe, et al., 2024).

Finally, the present research did not account for the severity of cardiac symptoms or current pharmacological regimens, both of which represent critical confounding variables that may independently modulate depression and patient-reported QoL. Consequently, addressing these medical complexities alongside psychosocial factors is essential for clinicians to foster comprehensive recovery trajectories in patients with chronic heart disease. (Upadhyay, et al., 2022; Kažukauskienė, Bunevičius, Gečaitė-Stončienė, & Burkauskas, 2021).

Furthermore, future studies should consider the inclusion of peer-led support programs, which have shown promise in mitigating symptoms of anxiety and depression in cohorts with

chronic cardiac conditions. Expanding the scope of future research to include longitudinal assessments and multilevel modeling across diverse geographical settings will clarify the stability of these psychosocial predictors. (Ji, et al., 2024; Badal, et al., 2025).

Integrating these psychosocial constructs into the broader framework of chronic illness management, such as the theory of self-care, could provide a more holistic perspective for developing targeted clinical interventions. (Babygeetha & Devineni, 2024).

Moreover, addressing the underrepresentation of female patients remains a critical priority for future trials, as sex-driven constructs significantly influence the perception and utilization of social support. (Lanini, et al., 2024).

Addressing these limitations in future research will be essential for refining clinical strategies, as current evidence indicates that, while psychosocial interventions have the potential to improve quality of life, their clinical significance is often inconsistent and warrants more robust, long-term evaluation.

CONCLUSION AND SUGGESTION

The research concludes that social support and dignity are critical determinants of health-related quality of life, affirming the necessity of holistic, psychosocially integrated cardiac care. By prioritizing psychosocial interventions alongside traditional clinical practices, healthcare providers can better mitigate psychological distress and enhance overall patient well-being. Future research should investigate the efficacy of structured psychological support frameworks in diverse clinical settings to determine their long-term impact on patient-reported outcomes.

Additionally, expanding investigations to include sex-specific psychosocial risk profiles is essential for tailoring rehabilitation programs to the unique social and demographic needs of female cardiac patients. Such efforts should also prioritize the systematic implementation of screening for psychological risk factors within routine cardiac rehabilitation to establish more effective, evidence-based care pathways.

Furthermore, exploring the implementation of innovative payment models and organizational facilitators will be vital to overcoming the financial and structural barriers that currently hinder the integration of comprehensive psychosocial services.

Finally, researchers should examine the role of digital health platforms in delivering accessible, longitudinal psychosocial monitoring, as these technologies may bridge the gap between hospital-based care and home-based recovery.

APPRECIATE

The author wishes to convey heartfelt gratitude to everyone who helped complete this study. Special thanks go to the management and personnel of Haji General Hospital Medan for facilitating data collection and providing essential assistance. The author also appreciates the guidance and supervision of the faculty advisors at Philipina Women University, whose expertise and constructive feedback were invaluable throughout the research process. Gratitude is further extended to the respondents for their willingness and honesty in participating, without which this study would not have been possible. Finally, the author expresses gratitude to family and coworkers for their encouragement and assistance in preparing this manuscript.

REFERENCES

Abiola, T., Udofia, O., & Zakari, M. (2013). Psychometric Properties of the 3-Item Oslo Social Support Scale among Clinical Students of Bayero University, Kano, Nigeria. *The Malaysian Journal of Psychiatry*, *22*(2), 32–41. https://www.mjpsychiatry.org/index.php/mjp/article/view/264

Adam, A. M. (2020). Sample Size Determination in Survey Research. *Journal of Scientific Research and Reports*, 90–97. https://doi.org/10.9734/jsrr/2020/v26i530263

Adamu, K., Feleke, A., Muche, A., Yasin, T., Mekonen, A. M., Chanie, M. G., Eshete, S., Mohammed, A., Endawkie, A., & Fentaw, Z. (2022). Health-related quality of life among adult hypertensive patients on treatment in Dessie City, Northeast Ethiopia. *PLoS ONE*, *17*(9). https://doi.org/10.1371/journal.pone.0268150

Agbedeyi, O. D., & Igweze, A. H. (2014). *Robust Method for Testing the Significance of Bivariate Correlation of Ordinal Data*. *4*(11), 169–174. http://citeseerx.ist.psu.edu/viewdoc/summary?doi=10.1.1.651.7704

Alharbi, M., Alharbi, F., AlTuwayjiri, A., Alharbi, Y., Alhofair, Y., Alanazi, A., AlJlajle, F., Khalil, R., & Al-Wutayd, O. (2022). Assessment of health-related quality of life in patients with heart failure: a cross-sectional study in Saudi Arabia. *Health and Quality of Life Outcomes*, *20*(1), 128–128. https://doi.org/10.1186/s12955-022-02040-7

Babygeetha, A., & Devineni, D. (2024). Social support and adherence to self-care behavior among patients with coronary heart disease and heart failure: A systematic review. *Europe's Journal of Psychology*, *20*(1), 63–77. https://doi.org/10.5964/ejop.12131

Badal, T., Baxter, W., Lloyd, L., Ruban, S., Nicholson, C., Strange, G., Rutherford, C., & Celermajer, D. S. (2025). Health-Related Quality of Life in Adults with Congenital Heart Disease - A Population-Based Study from the Australian National Registry. In *medRxiv*. https://doi.org/10.1101/2025.10.17.25338261

Bannour, R., Harzali, Z., Dhouib, W., Cheikh, A. B., Bhiri, S., Ghali, H., Khéfacha, S., Latiri, H. S., & Rejeb, M. B. (2021). Social support and health-related quality of life among patients with chronic heart failure. *European Journal of Public Health*, *31*. https://doi.org/10.1093/eurpub/ckab165.603

Blakoe, M., Olesen, C. S., Christensen, A. V., Palm, P., Hoejskov, I. E., & Berg, S. K. (2024). The rise and fall of a social support intervention feasibility trial targeting loneliness in patients with cardiac disease - lessons learned and future perspectives. *BMC Nursing*, *23*(1). https://doi.org/10.1186/s12912-024-02113-6

Chollou, K. M., Shirzadi, S., Pourrazavi, S., Babazadeh, T., & Ranjbaran, S. (2022). The Role of Perceived Social Support on Quality of Life in People with Cardiovascular Diseases. *Ethiopian Journal of Health Sciences*, *32*(5), 1019–1026. https://doi.org/10.4314/ejhs.v32i5.17

Doyal, L. (1997). Informed consent in medical research: Journals should not publish research to which patients have not given fully informed consent–with three exceptions. *BMJ*, *314*(7087), 1107–1107. https://doi.org/10.1136/bmj.314.7087.1107

Etikan, İ. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1–1. https://doi.org/10.11648/j.ajtas.20160501.11

Fatima, Z., Aziz, I., & Noureen, S. (2023). Impact Of Social Support and Coping Mechanisms on Health-Related Quality of Life Among Heart Patients. *Global Sociological Review*, 403–403. https://doi.org/10.31703/gsr.2023(viii-ii).41

Feng, Y., Kohlmann, T., Janssen, M. F., & Buchholz, I. (2020). Psychometric properties of the EQ-5D-5L: a systematic review of the literature. *Quality of Life Research*, *30*(3), 647–673. https://doi.org/10.1007/s11136-020-02688-y

Ghafoor, H., Nordbeck, P., Ritter, O., Pauli, P., & Schulz, S. M. (2021). Can Religiosity and Social Support Explain Effects of Trait Emotional Intelligence on Health-Related Quality of Life: A Cross-Cultural Study. *Journal of Religion and Health*, *61*(1), 158–174. https://doi.org/10.1007/s10943-020-01163-9

. Hurst, N. P., Kind, P., Ruta, D., Hunter, M. M., & Stubbings, A. (1997). Measuring health-related quality of life in rheumatoid arthritis: validity, responsiveness and reliability of EuroQol (EQ-5D). *Lara D. Veeken*, *36*(5), 551–559. https://doi.org/10.1093/rheumatology/36.5.551

Jellestad, L., Meier, V. G., Bierbauer, W., Bermudez, T., Auschra, B., Günther, M. P., Scholz, U., Känel, R. von, Hermann, M., & Euler, S. (2022). Differential associations of emotional and physical domains of the MacNew Heart with changes in the 6-minute walking test. *Quality of Life Research*, *32*(2), 615–624. https://doi.org/10.1007/s11136-022-03247-3

Ji, Q., Zhang, L., Xu, J., Ji, P., Song, M., Chen, Y., & Guo, L. (2024). The relationship between stigma and quality of life in hospitalized middle-aged and elderly patients with chronic diseases: the mediating role of depression and the moderating role of psychological resilience. *Frontiers in Psychiatry*, *15*, 1346881–1346881. https://doi.org/10.3389/fpsyt.2024.1346881

Kažukauskienė, N., Bunevičius, A., Gečaitė-Stončienė, J., & Burkauskas, J. (2021). Fatigue, Social Support, and Depression in Individuals With Coronary Artery Disease. *Frontiers in Psychology*, *12*, 732795–732795. https://doi.org/10.3389/fpsyg.2021.732795

Kim, H., Bae, S. H., Lim, S., & Park, J. (2022). Predictors of health-related quality of life after coronary artery bypass graft surgery. *Scientific Reports*, *12*(1), 16119–16119. https://doi.org/10.1038/s41598-022-20414-1

Kocalevent, R., Berg, L., Beutel, M. E., Hinz, A., Zenger, M., Härter, M., Nater, U. M., & Brähler, E. (2018). Social support in the general population: standardization of the Oslo Social Support Scale (OSSS-3). *BMC Psychology*, *6*(1), 31–31. https://doi.org/10.1186/s40359-018-0249-9

Laksmana, R., Afriyanti, E., & Bawono, A. S. (2025). FACTORS RELATED TO QUALITY OF LIFE IN CORONARY HEART DISEASE PATIENTS AT CARDIAC POLYCLINIC DR. M. DJAMIL PADANG HOSPITAL. *Menara Medika*, *7*(2), 227–242. https://doi.org/10.31869/mm.v7i2.6269

Lanini, L. L. S., Euler, S., Zuccarella-Hackl, C., Artiles, R. F., Niederseer, D., Auschra, B., Känel, R. von, & Jellestad, L. (2024). Differential associations of sex and age with changes in HRQoL during outpatient cardiac rehabilitation. *Journal of Patient-Reported Outcomes*, *8*(1), 11–11. https://doi.org/10.1186/s41687-024-00688-x

Liu, M., Chiou, A., Wang, C., Yu, W., & Lin, M. (2021). Relationship of symptom stress, care needs, social support, and meaning in life to quality of life in patients with heart failure from the acute to chronic stages: a longitudinal study. *Health and Quality of Life Outcomes*, *19*(1), 252–252. https://doi.org/10.1186/s12955-021-01885-8

Milayanti, W., Ansariadi, A., WAHIDUDDIN, W., Maria, I. L., Arsyad, D. S., Stang, & Amqan, H. (2021). Determinants of Quality of Life of Coronary Heart Disease Patients in Integrated Heart Center, Dr. Wahidin Sudirohusodo, Central General Hospital,

Makassar. *Journal of Cardiovascular Disease Research*, *12*(6), 286–291. http://jcdronline.org/?mno=136558

Muliantino, M. R., Ananda, Y., Mailani, F., Sarfika, R., Safitri, D. A., & Aulia, N. (2024). Understanding quality-of-life determinants in coronary arterial disease patients. *International Journal of Public Health Science (IJPHS)*, *13*(3), 1208–1208. https://doi.org/10.11591/ijphs.v13i3.24277

Murshid, B. Z., Alnasser, Z. I., Almaiman, W. K., Almubireek, N. A., Alshammari, R. E., Albariqi, S. F., & Alanazi, F. A. (2022). EFFECT OF PERCEIVED SOCIAL SUPPORT ON PROMOTING SELF- CARE BEHAVIOURS AMONG PATIENTS WITH CVD, AT NGHA. RIYADH, SAUDI ARABIA. *Journal of Pharmaceutical Negative Results*, 1437–1452. https://doi.org/10.47750/pnr.2022.13.s09.175

Norris, C. M., Ghali, W. A., Galbraith, P. D., Graham, M. M., Jensen, L., & Knudtson, M. L. (2004). Women with coronary artery disease report worse health-related quality of life outcomes compared to men. *Health and Quality of Life Outcomes*, *2*(1), 21–21. https://doi.org/10.1186/1477-7525-2-21

Nuraeni, A., Suryani, S., Trisyani, Y., & Pramukti, I. (2021). Social and Emotional Support Highly Associated with Helplessness among Coronary Heart Disease Patients. *Open Access Macedonian Journal of Medical Sciences*, *9*, 1–6. https://doi.org/10.3889/oamjms.2021.7308

Nurhamsyah, D., Trisyani, Y., & Nuraeni, A. (2022). Factors Affecting Quality of Life of Post-Acute Coronary Syndrome Patients in Indonesia. *Open Access Macedonian Journal of Medical Sciences*, *9*, 203–206. https://doi.org/10.3889/oamjms.2021.7319

Pedreso, E., Alamban, L., & Faderan, B. (2021). Health-related quality of life among cardiovascular patients enrolled in an adult cardiology clinic in a tertiary hospital. *European Journal of Preventive Cardiology*, *28*. https://doi.org/10.1093/eurjpc/zwab061.263

Setia, M. S. (2016). Methodology series module 3: Cross-sectional studies. *Indian Journal of Dermatology*, *61*(3), 261–261. https://doi.org/10.4103/0019-5154.182410

Shafiq, S., & Shahzadi, I. (2023). MENTAL HEALTH AND QUALITY OF LIFE IN PATIENTS WITH CARDIOVASCULAR DISEASES: SOCIAL SUPPORT AS MEDIATOR. *Journal of Postgraduate Medical Institute*, *37*(2), 114–118. https://doi.org/10.54079/jpmi.37.2.3101

Shibeshy, A. B., Tilahun, W., Tsegabirhan, H., Haftu, M., & Belay, K. (2021). Health-Related Quality of Life and Associated Factors Among Adult Patients With Heart Failure in Tertiary Hospitals in the Tigray Region, Northern Ethiopia, 2020. In *Research Square*. https://doi.org/10.21203/rs.3.rs-548193/v1

Stratton, S. J. (2021). Population Research: Convenience Sampling Strategies. *Prehospital and Disaster Medicine*, *36*(4), 373–374. https://doi.org/10.1017/s1049023x21000649

Syaiful, S., Pratikso, P., & Mudjanarko, S. W. (2023). Literature Study of the Sustainability Model of Transportation Facilities and Infrastructure in the Management of Public Transportation with the Concept of Inter-Regional Cooperation (Case in the City and District of Bogor). *ASTONJADRO*, *12*(2), 613–634. https://doi.org/10.32832/astonjadro.v12i2.14114

Talin, I. A., Abid, M. H., Samad, M. A., Azpíroz, I. D., Díez, I. de la T., Ashraf, I., & Nahid, A.-A. (2023). Exploring factors influencing the severity of pregnancy anemia in India: a study using the proportional odds model. *Scientific Reports*, *13*(1), 22816–22816. https://doi.org/10.1038/s41598-023-49872-x

Tito, K., Gebremariam, G. T., Beyene, K., Sander, B., & Gebretekle, G. B. (2022). Health-related quality of life and treatment satisfaction of patients with cardiovascular disease in Ethiopia. *Frontiers in Public Health*, *10*, 972378–972378. https://doi.org/10.3389/fpubh.2022.972378

Tušek-Bunc, K., & Petek, D. (2016). Comorbidities and characteristics of coronary heart disease patients: their impact on health-related quality of life. *Health and Quality of Life Outcomes*, *14*(1), 159–159. https://doi.org/10.1186/s12955-016-0560-1

Upadhyay, V., Bhandarı, S. S., Prasad, D., Dutta, S. K., García-Grau, P., & Vaddiparti, K. (2022). Improving depression and perceived social support enhances overall quality of life among myocardial infarction survivors: necessity for integrating mental health care into cardiac rehabilitation programs. *The Egyptian Journal of Neurology, Psychiatry, and Neurosurgery*, *58*(1). https://doi.org/10.1186/s41983-022-00521-6

Wan, L., Yang, G., Dong, H., Liang, X., & He, Y. (2024). Impact of cardiovascular disease on health-related quality of life among older adults in eastern China: evidence from a national cross-sectional survey. *Frontiers in Public Health*, *11*, 1300404–1300404. https://doi.org/10.3389/fpubh.2023.1300404

Zangirolami-Raimundo, J., Echeimberg, J. de O., & Leone, C. (2018). Research methodology topics: Cross-sectional studies. *Journal of Human Growth and Development*, *28*(3), 356–360. https://doi.org/10.7322/jhgd.152198

Zhang, H., Wang, Y., Cai, X., Tang, N., Wei, S., & Yang, Y. (2022). Family functioning and health-related quality of life of inpatients with coronary heart disease: a cross-sectional study in Lanzhou city, China. *BMC Cardiovascular Disorders*, *22*(1), 397–397. https://doi.org/10.1186/s12872-022-02844-x