*Original Article*

# Moderating Effects of Forgiveness on Relationship Between Empathy and Health-Related Quality of Life in Hemodialysis Patients: A Structural Equation Modeling Approach

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Yansheng Ye, RN, PhD, Dengyan Ma, RN, MN, Huaihong Yuan, RN, MN, Lin Chen, RN, BSc, Guorong Wang, RN, PhD, Jing Shi, RN, BSc, Yan Yu, RN, BSc, Yu Guo, RN, BSc, and Xiaolian Jiang, RN, PhD

*West China Hospital/West China School of Nursing (Y.Y., X.J.), Sichuan University, Chengdu, Sichuan; Division of Nephrology (D.M.), West China Hospital, Sichuan University, Chengdu, Sichuan; Hemodialysis Center (H.Y., L.C.), Division of Nephrology, West China Hospital, Sichuan University, Chengdu, Sichuan; Department of Nursing/Hemodialysis Center (G.W.), Sichuan Cancer Hospital, Chengdu, Sichuan; Hemodialysis Center (J.S.), Sichuan Province Traditional Chinese Medicine Hospital, Chengdu, Sichuan; Hemodialysis Center (Ya.Y.), Chengdu Second People's Hospital, Chengdu, Sichuan; and Hemodialysis Center (Y.G.), Chengdu First People's Hospital, Chengdu, Sichuan, China*

## Abstract

**Context.** Health-related quality of life (QOL) is a recommended clinical tool to assess hemodialysis patients and a primary end point to observe the effectiveness of overall disease management. Empathy is associated with positive outcomes such as pain relief and reduced anxiety and distress. Numerous studies have tested the relationships among empathy, forgiveness, and QOL; however, a mechanism of forgiveness has not been fully explored in hemodialysis patients.

**Objectives.** To test the relationship among empathy and health-related QOL and confirm the moderating effects of forgiveness on relationship between empathy and health-related QOL among hemodialysis patients.

**Methods.** In a descriptive cross-sectional study conducted from September to December 2017, 457 hemodialysis patients from five hospitals filled out the Heartland Forgiveness Scale, Interpersonal Reactivity Index-C, Kidney Disease Questionnaire, and general information. The data were analyzed using SPSS, and structural equation modeling was used to address the relationships among empathy, forgiveness, and health-related QOL.

**Results.** Empathy was significantly positively associated with health-related QOL. The proposed model had a good fit to the data. Forgiveness was found to play a partial mediating role between empathy and health-related QOL.

**Conclusion.** The results imply that empathy significantly directly and indirectly influences health-related QOL. Empathy among hemodialysis patients should be monitored and effectively managed to improve positive effects on their health-related QOL. Nurses should consider implementing empathy interventions with an emphasis on building forgiveness strategies to help hemodialysis patients improve their health-related QOL.   J Pain Symptom Manage 2019;57:224−232. © *2018 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.*

*Key Words*
*Disease management, empathy, forgiveness, health-related quality of life, hemodialysis patients, mediating role*

## Introduction

Chronic kidney disease is a worldwide problem and is classified into five stages for the cause, the glomerular filtration rate, and albuminuria.[1] Nearly 90% of patients diagnosed with end-stage renal disease regularly accept hemodialysis, which is the most

common treatment method in China and is provided in most Chinese hospitals as renal replacement therapy required to maintain the homeostasis of metabolic function.[2,3] Hemodialysis is undergone by over 640,000 people with kidney disease in China.[4]

Health-related quality of life (QOL) describes the health of patients with chronic diseases as a subjective perception of the illness and its related treatment in relation to physical, mental, and social well-being.[5,6] Health-related QOL is a prognostic measure and indicator of survival and is a recommended clinical tool to assess hemodialysis patients and a primary end point to observe the effectiveness of overall disease management.[7]

A growing body of research demonstrates that empathy by physician can improve the QOL of patients.[8,9] Empathy is defined as the capacity to recognize, share, understand, and respond with care to the experiences of others.[10] Canovas et al. (2018) reported that physicians' empathy ($P < 0.001$) had positive outcomes such as pain relief in patients with chronic pain.[9] Hojat et al. (2011) found that physicians' empathy ($P < 0.01$) was associated with better control of hemoglobin (HbA1c) and low-density lipoprotein in a sample of patients with diabetes.[11] Empathy could deem as communication and/or behaviors in interpersonal interactions and could be perceived by others.[12] More empathy in the physician-patients relationship strengthens mutual understanding and trust between the physician and patients.[10] Perceiving the physician's empathy could show better adherence to recommended treatment and have a lot of therapeutic benefits for patients, such as pain relief.[9,13–15] So, patients' empathy may improve their own health-related QOL in general practice. However, few studies have investigated the relationship between empathy and health-related QOL in the population of hemodialysis patients.

Most studies involving the relationship between empathy and forgiveness have found a positive relationship. For example, Kimmes et al. (2016) found that young adults with empathy scores were positively associated with forgiveness ($P < 0.001$).[16] Mellor et al. (2012) found that undergraduate students with better empathy benefited more from forgiveness than undergraduate students with poorer empathy.[17] Donovan et al. (2017) found that empathy significantly predicted forgiveness ($P < 0.001$) among volunteers.[18] One study found that empathy was positively associated with forgiveness in men but not in women among community residents.[19] Turnage et al. (2012) found that empathy was a significant predictor only of forgiveness of others, a dimension of forgiveness.[20] These inconsistent results regarding the relationship between empathy and forgiveness are worth clarifying to suggest methods for intervention.

QOL can be improved by forgiveness, which is viewed as a coping strategy.[21] High levels of forgiveness have been found to be associated with high levels of health-related QOL in older people.[22] Gull et al. (2013) found that the practice of forgiveness in daily life leads to satisfaction and subjective well-being that leads to a better QOL.[23] A systematic review by Akhtar et al. (2016) verified that forgiveness helps reduce depression, anger and hostility, and stress and distress.[24] Forgiveness, a positive resource, links with health promotion, including decreased anxiety and depression, better psychological well-being and physical health, and longevity.[24–27] Low forgiveness scores are connected with post-traumatic stress disorder and severe symptoms of anxiety and depression.[28]

Numerous studies have tested the relationships among empathy, forgiveness, and QOL; however, a mechanism of forgiveness has not been fully explored. The overall hypothesized model developed in this study was based on the forgiveness as a moderator of biopsychosocial responses and adjustment and empirical evidence obtained from the aforementioned studies (Fig. 1).[21,29,30] The model was used to explore the relationships among empathy, forgiveness, and health-related QOL, with the results suggesting that empathy influences health-related QOL through its effects on forgiveness. However, there is limited research on forgiveness enhancing the relationship between empathy and health-related QOL, and it remains an undervalued and understudied topic.

Based on the aforementioned conceptual bases, the purpose of this study is 1) to examine the relationship among empathy and health-related QOL in hemodialysis patients and 2) to confirm the moderating effect of forgiveness on the relationship between empathy and health-related QOL using structural equation modeling (SEM).

## Methods

### Study Population and Sample

A convenience sample of hemodialysis patients was recruited from five third-level general hospitals in Chengdu city, Sichuan province. Participants matching the following inclusion criteria were adopted for
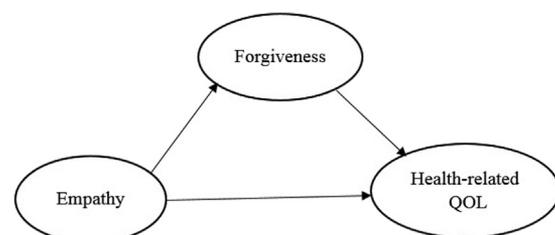


Fig. 1. Hypothesized theoretical model.

this study: 1) patients with end-stage renal disease, 2) whose treatment lasted more than 3 months, 3) who knew about and agreed to participate in this study, and 4) who were above the age of 18 years. The exclusion criteria were as follows: 1) hemodialysis patients with infectious diseases such as hepatitis B, hepatitis C, syphilis, and HIV and 2) hemodialysis patients with cognitive impairment or inability to communicate normally.

A general rule of thumb is that more than 200 samples should be obtained for SEM or 5~20 times the number of parameters to be estimated.[31] With 12 observed variables, the number of parameters to be estimated for the present study was 69; thus, the inclusion of 457 hemodialysis patients was consistent with the aforementioned rules.

## Measures
*Empathy.* The Interpersonal Reactivity Index-C (IRI-C) first developed by Davis (1980) was first used to measure empathy.[32] Based on this original version, Zhang (2010) created a new IRI-C that was suitable for Chinese patients.[33] The questionnaire consisted of 22 items categorized into four subscales: perspective taking (5 items), fantasy (6 items), empathy concern (6 items), and personal distress (5 items). The IRI-C scores were computed as the sum of the four subscales and varied between 0 and 88, with higher scores indicating a higher level of empathy. On a 5-point scale, the responses ranged from 0 (does not describe me well) to 4 (describes me well). IRI-C is a self-rating scale for respondents. The questionnaire is a reliable tool to measure empathy.[34] In this study, the Cronbach's alpha coefficient was 0.832.

*Forgiveness.* The Heartland Forgiveness Scale (HFS) first developed by Thompson et al. (2005) was used to measure forgiveness.[35] Using this original version, Zhang (2009) created a new HFS that was suitable for Chinese people.[36] The questionnaire consisted of 14 items categorized into three subscales: forgiveness of self (4 items), forgiveness of others (5 items), and forgiveness of situations (5 items). The HFS scores were computed as the sum of the three subscales and varied between 14 and 98, with higher scores indicating a higher level of forgiveness. On a seven-point scale, the responses ranged from 1 (complete nonconformity) to 7 (completely conformity). HFS is a self-rating scale for respondents. In this study, the Cronbach's alpha coefficient was 0.873.

*Health-Related Quality of Life.* The Kidney Disease Questionnaire (KDQ) to measure the health-related QOL of hemodialysis patients was first developed by Laupacis et al. (1992).[37] Using this original version, Wang et al. (2008) created a new KDQ to measure health-related QOL that was suitable for Chinese hemodialysis patients.[38] The questionnaire consisted of 26 items categorized into five subscales: physical symptoms (6 items), fatigue (6 items), depression (5 items), relationships with others (6 items), and frustration (3 items). The KDQ scores were computed as the sum of the five subscales and varied between 26 and 182, with higher scores indicating a higher level of QOL. On a 7-point scale, the responses ranged from 1 (always) to 7 (never). KDQ is a self-rating scale for respondents. The questionnaire is a reliable tool to measure the health-related QOL of hemodialysis patients.[39] In this study, the Cronbach's alpha coefficient was 0.851.

*Data Collection.* The data were collected from September to December 2017. After the purpose and significance of the study, the confidentiality agreement, and a gift to be provided in exchange for participation were explained, hemodialysis patients who had an interest in participating could contact the researchers. The hemodialysis patients took 20–25 minutes to fill out the questionnaires. Overall, 482 questionnaires were received, and because 25 of the questionnaires' answer was regular such as the repeated options were 3, 2, and 1, 457 questionnaires were suitable for statistical analysis.

*Ethical Considerations.* Ethical approval of this study was obtained from the West China Hospital of Sichuan University Biomedical Research Ethics Committee (Ethics number: 2017-388). The hemodialysis patients who enrolled in this study were informed of the purpose, significance, and procedures. Participation in this study was voluntary and anonymous, and declining to participate had no impact on a patient's treatment. All data were secure, confidential, and used only by the research team.

## Data Analysis
*Primary Analysis.* The scores for empathy, forgiveness, and health-related QOL showed normal distributions (tested by Kolmogorov-Smirnov test with SPSS).

The SPSS (version 22.0, IBM) was used to address descriptive statistics, and Pearson correlation was used for all study variables.

Descriptive statistics (frequency, percentage, mean and standard deviations) were used to analyze demographic characteristics, empathy, forgiveness, and health-related QOL.

Regression analysis was used among the demographic and clinical characteristic variables and health-related QOL to select the control variables to be included in the SEM.

*Structural Equation Modeling Analysis.* The proposed structural model of empathy, forgiveness, and health-

related QOL outlined in Figure 1 was estimated with subscale scores as indicators using the Analysis of Moment Structures (AMOS, version 22.0) program. SEM with maximum likelihood was used to verify the relationships and predictions with the assumption that the multivariate data of empathy, forgiveness, and health-related QOL were normally distributed. Measurement errors of SEM were considered during the analysis. The goodness of fit of SEM was judged by indices including likelihood ratio ($x^2/df$), the goodness-of-fit index (GFI), the comparative fit index (CFI), the Tucker-Lewis fit index (TLI), standardized root-mean-square residual (SRMR), and root mean square error of approximation (RMSEA). The acceptable standard of SRMR and RMSEA was ≤0.08, that of $x^2/df$ was <3, and that of the rest of the indices, including GFI, CFI, and TLI, was ≥0.90.[40] When the modification indices are larger than 10, it is necessary to modify the structural model to improve the model fit. Furthermore, mediating effects were tested by investigating standardized indirect effects and bootstrapped confidence interval estimate were calculated to confirm the significance of indirect effects.

*Table 1*
**Demographic and Clinical Characteristics of the Sample**
**($N = 457$)**

| Variable | n (%) |
|---|---|
| Gender | |
|   Male | 265 (57.99) |
|   Female | 192 (42.01) |
| Age, years | |
|   18−45 | 178 (38.95) |
|   45−76 | 279 (61.05) |
| Education | |
|   ≥ High school diploma | 287 (62.80) |
|   < High school diploma | 170 (37.20) |
| Occupation | |
|   Yes | 80 (17.51) |
|   No | 377 (82.49) |
| Marital status | |
|   Married | 389 (85.12) |
|   Unmarried | 43 (9.41) |
|   Other | 25 (5.47) |
| Income status (per month) | |
|   ≥10,000 yuan | 58 (12.69) |
|   5000−10,000 yuan | 363 (79.43) |
|   <5000 yuan | 36 (7.88) |
| Primary kidney disease | |
|   Primary glomerular disease | 239 (52.30) |
|   Diabetes mellitus | 95 (20.79) |
|   Hypertension | 62 (13.57) |
|   Polycystic kidney disease | 18 (3.94) |
|   Renal stone | 8 (1.75) |
|   Other | 35 (7.65) |

## Results

The demographic and clinical characteristics of the hemodialysis patients are presented in Table 1. The sample consisted of 457 patients, and the respondents' mean age was 57.63 years (SD = 13.25; range 20−76); 57.99% of the respondents were male ($n = 265$), 61.05% were 45−76 years old, 62.80% had more than a high school diploma, 82.49% had lost their job, 85.12% were married, 79.43% had income status (per month) of 5000−10,000 yuan, and 52.30% respondents with primary kidney disease had primary glomerular disease.

Means, standard deviations, and correlations among the related variables are presented in Table 2. The mean scores of the KDQ scales were low considering the judgment criteria of Liu (2009).[39] The mean score of forgiveness was 58.62, which denotes a moderate level of forgiveness.[35,36] The results of the correlation analysis demonstrated that all the study variables, such as empathy, forgiveness, and health-related QOL, were significantly correlated with each other, but the correlations with health-related QOL were the highest (Table 2). Consequently, a multilevel structural model of empathy, forgiveness, and health-related QOL was conducted to test the mediation model.

### Testing the Proposed Model

Regression analysis was used to test the effects of demographic and clinical characteristics on health-related QOL, which revealed that the combined demographic and clinical characteristics explained 21.6% of the variance in health-related QOL. In the demographic and clinical characteristics, only age (β = −0.31, $P = 0.003$) and education (β = 0.47, $P = 0.000$) significantly affected health-related QOL, which was addressed as a control variable later in the final model.

The proposed model was tested based on the empirical evidence of forgiveness. The proposed model fit was shown by the following values: $x^2/df = 2.713$, $P < 0.01$; GFI = 0.899, CFI = 0.935, TLI = 0.939, SRMR = 0.081, and RMSEA = 0.078. For modification indices larger than 10, one correlated error in empathy and one correlated error in health-related QOL were included to improve the model fit. The final model fit shown in Figure 2 was adequate, as indicated by the following values: $x^2/df = 1.569$, $P < 0.01$; GFI = 0.939, CFI = 0.952, TLI = 0.961, SRMR = 0.073, and RMSEA = 0.067.

### Effect Estimates

In the final model, empathy and forgiveness explained 56% of the variance in health-related QOL (Fig. 2). Testing the effects of explanatory variables on response variables found that all the paths in the model with empathy, forgiveness, and health-related QOL were significant, as shown in Table 3. Empathy

*Table 2*
**Correlations Between Empathy, Forgiveness, and Health-Related Quality of Life (N = 457)**

| Variable | Mean | SD | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 PT | 10.28 | 4.05 | 1 | | | | | | | | | | | | | | |
| 2 FS | 11.92 | 4.79 | 0.439** | 1 | | | | | | | | | | | | | |
| 3 EC | 12.28 | 5.18 | 0.321** | 0.661** | 1 | | | | | | | | | | | | |
| 4 PD | 10.21 | 4.29 | 0.188* | 0.482* | 0.645** | 1 | | | | | | | | | | | |
| 5 IRI-C | 44.68 | 9.83 | 0.536** | 0.719** | 0.738** | 0.652** | 1 | | | | | | | | | | |
| 6 FS1 | 15.02 | 4.66 | 0.110 | 0.379** | 0.277** | 0.408** | 0.373** | 1 | | | | | | | | | |
| 7 FO | 20.40 | 5.69 | 0.144 | 0.369** | 0.233** | 0.322** | 0.340** | 0.434** | 1 | | | | | | | | |
| 8 FS2 | 23.21 | 5.97 | 0.120 | 0.320** | 0.203** | 0.344** | 0.318** | 0.403** | 0.570** | 1 | | | | | | | |
| 9 HFS | 58.62 | 9.80 | 0.168* | 0.431** | 0.297** | 0.433** | 0.417** | 0.650** | 0.706** | 0.692** | 1 | | | | | | |
| 10 PS | 22.66 | 9.04 | 0.168* | 0.407** | 0.338** | 0.289** | 0.379** | 0.455** | 0.192** | 0.141 | 0.329** | 1 | | | | | |
| 11 FA | 22.47 | 7.98 | 0.413** | 0.391** | 0.374** | 0.322** | 0.467** | 0.286** | 0.274** | 0.204** | 0.316** | 0.231** | 1 | | | | |
| 12 DE | 17.53 | 5.19 | 0.526** | 0.495** | 0.173* | 0.406** | 0.583** | 0.315** | 0.398** | 0.313** | 0.414** | 0.283** | 0.633** | 1 | | | |
| 13 RO | 29.41 | 8.59 | 0.187* | 0.437** | 0.365** | 0.303** | 0.405** | 0.508** | 0.198** | 0.169* | 0.362** | 0.455** | 0.191* | 0.314** | 1 | | |
| 14 FR | 9.62 | 2.62 | 0.373** | 0.342** | 0.328** | 0.282** | 0.417** | 0.247** | 0.252** | 0.164* | 0.278** | 0.188* | 0.696** | 0.570** | 0.182* | 1 | |
| 15 KDQ | 101.69 | 16.08 | 0.452** | 0.555** | 0.507** | 0.439** | 0.598** | 0.495** | 0.366** | 0.287** | 0.463** | 0.537** | 0.673** | 0.679** | 0.524** | 0.647** | 1 |

PT = perspective taking; FS = fantasy; EC = empathy concern; PD = personal distress; IRI-C = Interpersonal Reactivity Index-C; FS1 = forgiveness of self; FO = forgiveness of others; FS2 = forgiveness of situations; HFS = Heartland Forgiveness Scale; PS = physical symptoms; FA = fatigue; DE = depression; RO = relationships with others; FR = frustration; KDQ = Kidney Disease Questionnaire.
**$P < 0.01$, *$P < 0.05$.

had significant direct effects on forgiveness ($\beta = 0.61$, $P = 0.012$) and health-related QOL ($\beta = 0.54$, $P = 0.019$). Forgiveness had a significant direct effect on health-related QOL ($\beta = 0.28$, $P = 0.008$). Empathy significantly influenced health-related QOL ($\beta = 0.11$, $P = 0.017$) indirectly through forgiveness mediating the relationship between empathy and health-related QOL.

## Discussion

The direct effect of empathy on health-related QOL was further confirmed, and initial evidence for the moderating role of forgiveness in the effects of empathy on health-related QOL was found. These findings open the door to new ways of improving health-related QOL among hemodialysis patients by emphasizing the important roles of empathy and forgiveness.

Empathy was positively associated with health-related QOL among hemodialysis patients, which is consistent with previous studies. For instance, Rosen et al. (2016) found that higher empathy was associated with greater QOL.[41] Empathy can manifest as communication and/or behaviors in interpersonal interactions that could increase patients' self-efficacy and self-management.[13,42] Better empathic ability in patients could contribute to various kinds of prosocial behavior, including making it easier for them to agree with health care providers and hence leading to improved insight.[43–46] Therefore, empathy helps patients understand their treatment options and take part in decision-making; thus, it is a key tool in patient-centered care.[12,47] More empathy for patients in the patient-health care provider relationship enhances mutual understanding and trust between the patient and health care provider, facilitating patients' expression of their symptoms and concerns and prompting health care providers to collect more detailed medical and psychosocial information. This improved situation leads to more accurate diagnoses and treatment plans and thus better patients' compliance and health outcomes such as QOL.[48–51] Less empathy for patients is known to be connected with poor function in both mental health and physical health.[52]

Forgiveness had a positive and significant association with health-related QOL. In line with previous cross-sectional findings,[23,53,54] our results show the beneficial role that forgiveness could play in health-related QOL. Forgiveness, from a psychosocial perspective, may be viewed as an adaptive emotion-focused coping strategy that has functional utility in surmounting negative emotions, including anger, anxiety, depression, and guilt.[21] People with more forgiving tendencies are more likely to self-regulate
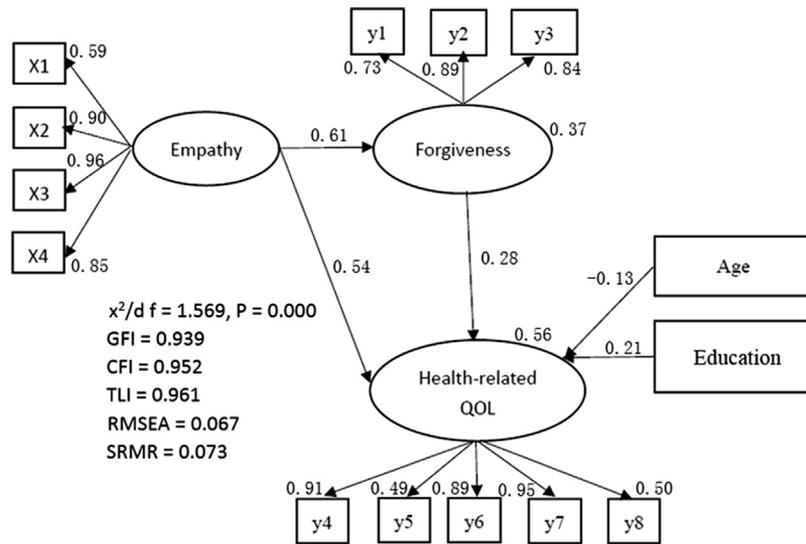
Fig. 2. Final model. GFI = goodness-of-fit index; CFI = comparative fit index; TLI = Tucker-Lewis fit index; RMSEA = root mean square error of approximation; SRMR = standardized root-mean-square residual; QOL = quality of life.

and to set a goal of solving troublesome problems.[55,56] In addition, they are more likely to repress behavior that damages their mental and/or physical health and more likely to avoid intrapersonal and/or interpersonal strategies such as anger, guilt, physical violence, and berating. The research has identified forgiveness as a primary aspect of motivational transformation, which is regarded as operational in inhibiting negative instincts and reinforcing positive actions.[55] Forgiveness has been linked with decreased sympathetic arousal and increased parasympathetic tone and thus is regarded as an important way to solve strong negative feelings and restore hope.[57,58] Hemodialysis patients have self-perceived burdens, including the obvious economic, emotional, and physical burdens.[59,60] If lack of forgiveness lingers, mental and physical health could be severely compromised and QOL decreased.[21]

This study not only further confirmed the direct relationship between empathy and health-related QOL but is also the first to verify the moderating effect of forgiveness on the relationship between empathy and health-related QOL. Forgiveness strengthened the positive effect of empathy on health-related QOL. In other words, the relationship between empathy and health-related QOL was enhanced because of forgiveness. Empathy, a key in the forgiveness process, is a core component of the therapeutic relationship and has become the single most confirmed factor in therapeutic definitions of forgiveness.[61,62] The patient experiences forgiveness through the therapeutic relationship characterized by empathy. Sufficient studies on forgiveness have identified its antecedents, such as empathy, level of education, and religiosity.[63] Forgiveness, in part, can be viewed as a prosocial change in individuals' thoughts, emotions, or behaviors toward themselves, others, or situations.[64] Such change can include improved awareness, thoughts, and acceptance of strong negative emotions such as anger; development of empathy toward oneself, others, or situations; modification of thoughts and release of previously unsatisfied needs; and starting a new life, all of which lead to improved QOL.[65]

Among the demographic and clinical characteristics, age and education were significant predictors of

*Table 3*
**Indirect and Direct Effects of Explanatory Variables on Response Variables (N = 457)**

| Structural Path | Unadjusted Coefficients | | Adjusted Coefficients | |
| --- | --- | --- | --- | --- |
| | β (95% CI) | P | β (95% CI) | P |
| Direct effects | | | | |
| Empathy → forgiveness | 0.61 (0.342 to 0.817) | 0.012 | 0.61 (0.342 to 0.817) | 0.012 |
| Empathy → health-related QOL | 0.56 (0.314 to 0.867) | 0.019 | 0.54 (0.311 to 0.873) | 0.019 |
| Forgiveness → health-related QOL | 0.29 (0.127 to 0.413) | 0.008 | 0.28 (0.126 to 0.412) | 0.008 |
| Indirect effects | | | | |
| Empathy → health-related QOL | 0.11 | 0.017 | 0.11 | 0.017 |

CI = confidence interval; QOL = quality of life.

health-related QOL. Age had negative effects on health-related QOL, which echo the findings of previous research.[66,67] Bayomi et al. (2013) found that age is an important contributor to low health-related QOL in the hemodialysis patients, which was due to hemodialysis patients being found to be with more functional impairment and disability than in age-matched controls.[66] Results from this study showed that hemodialysis patients with a higher education level had a higher level of health-related QOL, which support the previous study.[67] The possible explanation is that higher educational level is usually more job opportunities, which improves financial status, social relationship, and self-esteem, resulting in higher health-related QOL.[68]

This study has distinct strengths, such as using SEM approach to explore the moderating effects of forgiveness in the association of empathy and health-related QOL among hemodialysis patients first. This study also had several limitations. First, the use of convenience sampling (from five hospitals) might limit the generalizability of these findings. Second, given the cross-sectional design and self-reported nature of the study, the findings must be interpreted with caution because they might not show the relationships in different time frames and the questionnaire might not truly reflect the thoughts of hemodialysis patients. It is crucial to follow up with longitudinal research, which should be designed to replicate the present study at different regional hospitals to verify these results.

This study results confirm that empathy has a direct effect on health-related QOL and highlights the moderating effects of forgiveness on relationship between empathy and health-related QOL, which have never been thoroughly explored among hemodialysis patients. Implications for practice of the study were obvious especially for nurses in China. The findings indicate that empathy is a critical problem among hemodialysis patients. Empathy levels should be appropriately assessed and monitored. The hemodialysis patients should be aware of available psychological counseling services that they can access when they experience empathy-related symptoms such as under-listening to and emotions/affections of others. As a preventive measure, ameliorating empathy interventions with an emphasis on building forgiveness strategies such as perspective talking and respect for others can be developed and delivered to hemodialysis patients.

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