The Relation Between Quality of Relationships and Quality of Life of Elderly Widows in Northeastern Iran

Nasim Pirzadeh  
Shiraz University of Medical Sciences

Mahin Nazari (✉ manazari@sums.ac.ir)  
Shiraz University of Medical Sciences

Abdolrahim Asadollahi  
Shiraz University of Medical Sciences

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Abstract

Objective

widowhood is one of the inevitable challenges of aging, which may affect the quality of life. If the widow is in a good relationship with relatives and friends, the possibility of exposition to the damage caused by widowhood is decreased. Hence, the present study has been conducted to determine the relationship between quality of relationships and quality of life of elderly widows in northeastern Iran.

Materials & Methods

the descriptive-analytical study in kind of cross-sectional design was done on 1456 widows in northeastern Iran in 2021. The sampling in this study was done using proportional stratified random sampling. The data collection instrument included three questionnaires of demographic information, Quality of Relationships Inventory (QRI), and Elderly Quality of Life (QoL) Questionnaire (LIQAD). Data analysis was done using SPSS-25, and Amos-21.

Results

75.9% of elderly widows were suffering from types of chronic diseases. 82.7% of widows were illiterate. The results of this study showed that the quality of relationships can have a significant effect on the quality of life of elderly widows (effect size ≥ 0.30).

Conclusion

as it is proved that social support is an underlying indicator in health-related quality of life, the negative effects of widowhood on the quality of life can be reduced by making supporting family and social relationships.

Introduction

Nowadays, the aging of the population has been changed into a global concern(1, 2), and Iran is not an exception(3, 4). It is predicted that the ratio of the elderly population to the whole population in Iran reaches about 23% in 2050(5). This is strongly true among women because they have a life expectancy of about 6-8 years more than men(6). Widowhood can be one of the main challenges of aging, which is one of the most stressful negative events of life and brings many social challenges(7, 8). More than 13% of men and 40% of women above 65 years old are a widow(9). Therefore, widowhood can be recognized as a feminine issue(10). Accordingly, the time of becoming a widow, and the social-psychological experiences caused by widowhood can be affected by gender(7). Widowhood can leave a long-term effect on the life of a woman and can cause many challenges for her life(11, 12). For example, remarriage may not be a realistic option for widows (especially elderly widows) in Patriarchal cultures. Hence, they have to remain a widow and alone(13).
According to the supporting role of spouses in marital life, it is expected that they can improve the quality of life of the elderly by providing spiritual rest, daily care, and prevention of accidents(7, 14). However, the widow should learn to take new responsibilities and functions, and change plans, habits, conditions, and behaviors after the death of her life partner(8). Accordingly, coping with a spouse's death is difficult from multiple dimensions(9). The studies have revealed that widowhood can affect various dimensions such as physical, psychological dimensions, mortality, social interactions, and health-related quality of life (HRQOL) (14–17). Hence, supervision and analysis of quality of life among the elderly are important to identify the elderly with low quality of life. This is because; it causes preference of these groups at the time of general health policy-making processes(1).

It has been proved recently that social support is one of the most important psychological factors affecting mental health(16). Social support has been defined as the amount of using kindness, accompany, care, respect, attention, and help received from other individuals or groups such as family members, friends, and others(18, 19). Family relations and attachment to neighbors specified with relations such as love, sympathy, and perception of its value can be other types of social support (20). Such social support can be a fundamental performance in interpersonal relations(21). Besides, a sense of belonging, family structure, relationship with friends and society members can affect the type and intensity of problems deeply(9). The relations can be adjusting and facilitating factors while coping with stressful conditions of life and other responsibilities(18, 21).

According to the literature, the elderly people select spouse, children, and then other relatives and friends respectively as their priorities to get help and support(22). Hence, it could be mentioned that the main source of supporting elderly people can be the family and spouse(23). On the other hand, the findings show that aging increases the risk of decreased social sources by itself(24). Thus, widowhood makes elderly people more vulnerable than before to reduce social participation; because every person loses one of the main sources of emotional, instrumental, and financial support after losing a spouse(14, 25). Hence, access to social sources is vital to help reduction of the effect of losing a spouse and to cope with widowhood late in life(9, 15, 24).

The concept of perceived support in the quality of relationships is an intercultural issue(26, 27). Relationships with family, friends, and neighbors can not only help the widow emotionally but also can be an instrument to meet non-emotional needs and to help daily affairs such as meals, transportation, and home repair(8). Besides, the studies have shown that the quality of relationships can affect mental and physical health, life satisfaction, self-esteem, and quality of life(8, 13, 14).

According to the importance of quality of life, and quality of relations, and doubled importance of the relation between the two categories; this study has been conducted to analyze the relation between quality of relationships, and the quality of life of widows in northeastern Iran in 2021.

**Methods And Materials**
The descriptive-analytical study was done on 1456 widows in northeastern Iran using a cross-sectional design in 2021. Before starting the study, permission was issued by the ethics committee of Shiraz University of Medical Sciences (IR.SUMS.REC.1399.196). Sampling was done based on proportional stratified random sampling in three weighted steps based on the population of the elderly widows in northeastern Iran (n=17137). Then, three cities with the largest sample size of widows were selected as a study area. In the next step, 18 health centers were selected randomly from each city. In this section, the health centers were considered as 18 research clusters, and the sample size (minimum sample size per cluster was 50 and the maximum size was 100) was determined for each cluster based on the number of covered widows. In the last step, final sampling was done using the records of households in the SIB system. In this step, the records of 60-years-old and older widows covered by health centers n each city were separated at the first. Afterward, the samples were selected from the records randomly. After gaining the informed consent (Written and verbal ) of the elderly widows to participate in the study, the questionnaires were filled out. The desired sampling was continued until the time that sample size of each cluster was completed. The questionnaires were filled out by three native and trained questioners. After introducing themselves and explaining the research objectives, and ensuring the privacy of the information of the participants, the questioners took measures to fill out the questionnaires. Finally, 1456 rural and urban elderly widows were investigated based on the inclusion conditions. The inclusion conditions in this study are widowhood, ability to make relationships (no severe visual and hearing impairments that cannot be corrected with glasses and hearing aids), being under the coverage of health databases, and enrolled in the SIB system, and being satisfied to participate in the study. Data collection instruments were:

- Demographic information questionnaire specified to widows based on previous studies(28–33), which was researcher-made and contained 20 items.
- Quality of Relationships Inventory (QRI): the instrument is based on the interactive-cognitive model of social support, made by Pierce, Sarason & Sarason in 1990(21, 34). The inventory contains 25 items (3 subscales), and measures 1- perceived support of a special source (7 items) 2- interpersonal conflicts (12 items), and 3- depth of relationship (6 items). The said inventory has been used to measure the concept of quality of relationships and the consequences in physical and mental health in many studies (21, 26). The psychometrics of the inventory showed that QRI has high validity(21). The inventory measures the interpersonal relations with spouse, parents (QRP), and friends (QRF). As the participants in this study are widows and due to the previous studies emphasizing the importance of the supporting role of kids in aging and also widowhood (24, 35, 36), the spouse was replaced by kids (QRK).
- Elderly Quality of Life (QoL) Questionnaire (LIPAD): the questionnaire has been provided under the supervision of the 'World Health Organization OFFICE FOR Europe. The instrument contains 31 items, and measures 7 dimensions of quality of life (QOL) including physical dimensions (5 items), self-case (6 items), depression and anxiety (4 items), cognitive (5 items), social dimension (3 items), life satisfaction (6 items), and sexual issues (2 items). The scoring of the questionnaire was based on a 4-point Likert scale (from 0 (worst) to 3 (best)), and the scoring range is from 0 to 93 (37). According
to this study with the emphasis on widows, and due to the cultural issues in Iran, items 24 and 25 on sexual issues were eliminated.

Before the data analysis based on the hypotheses and the predicted expectation of the correlations of variables, a conceptual framework was traced according to Figure 1. Then, data analysis was done using SPSS-25 and Amos-21. For the description of the data, mean, and SD values were used. Also, one-way ANOVA and structural equation modeling (SEM) was used for data analysis. The significance level in all tests was 0.05.

**Results**

About 1456 elderly widows have participated in the study which considered themselves to belong to the divergent ethnic groups as 40.7% Persians, 46.1% Eastern Kurds (Kormanj); 44.8% of their husbands were died due to heart failure, 77.1% of widows do not receive any pensions or financial support. About 75.9% have a kind of chronic condition (Diabetes = 46.1% & Arthritis = 31.6%), and more than ten years living with this health problem (72.7%), majority of them do not live alone and 82.7% have no formal literacy during 2020. Also, the mean age = 69.1 (SD= 6.9) and 68.3% classified themselves as unhealthy. The mean and SD scores of the age of marriage, age of death of a spouse, age of widowhood, years of marital life, and years of spouse’s death were 66.42 (8.54), 61.06 (8.52), 44.31 (10.04), and 7.75 (1.46) respectively. The mean scores of QoL (LIPAD-29) were 48.02 (SD= 13.46), and quality of relationships with their friends, children, and parents were 63.6 (SD = 8.92), 62.7 (SD = 8.93), and 62.8 (SD = 8.59) respectively. Also, McDonald's omega as a reliability coefficient for the instruments i.e., QoL, QRP, QRF, and QRK were 0.95, 0.93, 0.94, and 0.93 respectively. The ICC scores of all instruments were more than 0.93 (P ≤ 0.05).

According to Table 1, the results of fixed effect ANOVA for domains of QR on QoL were extracted. The values of effect size indicate the high coefficient of the effect of independent variables in explaining QoL of middle and older widows. Among these, QRP, QRF, and QRK with an effect size of 0.105, 0.164, and 0.153 have the most impact on variance change of QoL of aging widows respectively.
### Table 1. Fixed Effect ANOVA Results and Eta Squared scores of QR on QoL

| Dependent Variables | SS<sup>a</sup>     | df | MS<sup>b</sup> | F     | Sig.  | Effect Size<sup>c</sup> |
|---------------------|---------------------|----|---------------|-------|-------|-------------------------|
| QRP                 | Between Groups      | 40401.907 | 64 | 631.280 | 1.155 | .003 | .105 |
|                     | Within Groups       | 761095.629 | 1392 | 546.764 |
|                     | Total               | 801497.536 | 1456 |
| QRF                 | Between Groups      | 33889.866 | 64 | 529.529 | .960 | .007 | .164 |
|                     | Within Groups       | 767607.670 | 1392 | 551.442 |
|                     | Total               | 801497.536 | 1456 |
| QRK                 | Between Groups      | 29612.948 | 64 | 462.702 | .834 | .007 | .153 |
|                     | Within Groups       | 771884.588 | 1392 | 554.515 |
|                     | Total               | 801497.536 | 1456 |

<sup>a</sup> Sum of Squares, <sup>b</sup> Mean Square, <sup>c</sup> Eta Squared, P-value ≤ 0.05

According to Table 2, the results of fixed effect ANOVA for domains of QR on QoL were extracted. The values of effect size indicate the high coefficient of the effect of independent variables in explaining QoL of middle and older widows. Among these, years of marital life with their husband and years of spouse’s death with scores of 0.616 and 0.195 have the most impact on variance change of QoL of the samples.

According to Tables 3 to 5, the results of fixed effect ANOVA for three domains of QR on QoL were extracted. Regarding the values of effect size, years of marital life with their deceased husband with an effect size of more than 0.160 has the most impact on variance change of three domains of QR of aging widows.
## Table 2. Fixed Effect ANOVA Results and Eta Squared scores of Demographic Variables on QoL

| Dependent Variables | SS<sup>a</sup>     | df | MS<sup>b</sup> | F    | Sig. | Effect Size<sup>c</sup> |
|---------------------|---------------------|----|----------------|------|------|-------------------------|
| Age of spouse death | Between Groups      | 11115.508 | 21 | 529.310 | .911 | .008 | .156 |
|                     | Within Groups       | 159276.208 | 274 | 581.300 |      |      |                  |
|                     | Total               | 170391.716 | 295 |        |      |      |                  |
| Age of widowhood    | Between Groups      | 21781.619 | 42 | 518.610 | .883 | .008 | .128 |
|                     | Within Groups       | 148610.098 | 253 | 587.392 |      |      |                  |
|                     | Total               | 170391.716 | 295 |        |      |      |                  |
| Age of spouse death | Between Groups      | 24964.932 | 43 | 580.580 | 1.005 | .000 | .147 |
|                     | Within Groups       | 145067.902 | 251 | 577.960 |      |      |                  |
|                     | Total               | 170032.834 | 294 |        |      |      |                  |
| Years of Marital Life | Between Groups  | 27487.424 | 47 | 584.839 | 1.015 | .003 | .161 |
|                     | Within Groups       | 142904.292 | 248 | 576.227 |      |      |                  |
|                     | Total               | 170391.716 | 295 |        |      |      |                  |
| Years of Spouse Death | Between Groups  | 16166.836 | 30 | 538.895 | .925 | .004 | .195 |
|                     | Within Groups       | 153859.300 | 264 | 582.800 |      |      |                  |
|                     | Total               | 170026.136 | 294 |        |      |      |                  |
| Education           | Between Groups      | 3886.377 | 6 | 647.729 | 1.128 | .006 | .123 |
|                     | Within Groups       | 164753.123 | 287 | 574.053 |      |      |                  |
|                     | Total               | 168639.500 | 293 |        |      |      |                  |
| Living.Lonely       | Between Groups      | 5091.103 | 2 | 2545.551 | 4.514 | .002 | .130 |

<sup>a</sup> Sum of Squares, <sup>b</sup> Mean Square, <sup>c</sup> Effect Size (eta squared)
Table 2. Fixed Effect ANOVA Results and Eta Squared scores of Demographic Variables on QoL

| Dependent Variables       | SS$^a$      | df  | MS$^b$   | F       | Sig. | Effect Size$^c$ |
|---------------------------|-------------|-----|----------|---------|------|-----------------|
|                           | Within Groups| 164094.057 | 291     | 563.897 |
|                           | Total       | 169185.160 | 293     |         |      |                 |
| Years of Living Alone     | Between Groups| 6555.121   | 6       | 1092.520| 1.929| .046            |
|                           | Within Groups| 164231.755 | 290     | 566.316 |
|                           | Total       | 170786.875 | 296     |         |      |                 |
| Financial support         | Between Groups| 22.390     | 2       | 11.195  | .019 | .001            |
|                           | Within Groups| 162351.339 | 281     | 577.763 |
|                           | Total       | 162373.729 | 283     |         |      |                 |
| Dependent Variables                      | SS<sup>a</sup> | df | MS<sup>b</sup> | F     | Sig.  | Effect Size<sup>c</sup> |
|-----------------------------------------|----------------|----|---------------|-------|-------|------------------------|
| Age.of.marriage.of.spouse               |                |    |               |       |       |                        |
| **Between Groups**                      | 6008.411       | 21 | 286.115       | .790  | .001  | .157                   |
| **Within Groups**                       | 99213.586      | 274| 362.093       |       |       |                        |
| **Total**                               | 105221.997     | 295|               |       |       |                        |
| Age of widowhood                        |                |    |               |       |       |                        |
| **Between Groups**                      | 12456.700      | 42 | 296.588       | .809  | .004  | .118                   |
| **Within Groups**                       | 92765.296      | 253| 366.661       |       |       |                        |
| **Total**                               | 105221.997     | 295|               |       |       |                        |
| Age of spouse death                     |                |    |               |       |       |                        |
| **Between Groups**                      | 14609.681      | 43 | 339.760       | .941  | .000  | .139                   |
| **Within Groups**                       | 90579.180      | 251| 360.873       |       |       |                        |
| **Total**                               | 105188.861     | 294|               |       |       |                        |
| Years.Marital-Life                      |                |    |               |       |       |                        |
| **Between Groups**                      | 17824.869      | 47 | 379.253       | 1.076 | .001  | .169                   |
| **Within Groups**                       | 87397.128      | 248| 352.408       |       |       |                        |
| **Total**                               | 105221.997     | 295|               |       |       |                        |
| Years of Spouse Death                   |                |    |               |       |       |                        |
| **Between Groups**                      | 11163.708      | 30 | 372.124       | 1.051 | .009  | .107                   |
| **Within Groups**                       | 93468.068      | 264| 354.046       |       |       |                        |
| **Total**                               | 104631.776     | 294|               |       |       |                        |
| Education                               |                |    |               |       |       |                        |
| **Between Groups**                      | 2753.650       | 6  | 458.942       | 1.299 | .007  | .126                   |
| **Within Groups**                       | 101377.194     | 287| 353.231       |       |       |                        |
| **Total**                               | 104130.844     | 293|               |       |       |                        |
| Living.Lonely                           |                |    |               |       |       |                        |
| **Between Groups**                      | 861.481        | 2  | 430.740       | 1.217 | .008  | .108                   |
| Dependent Variables          | SS<sup>a</sup> | df | MS<sup>b</sup> | F     | Sig.  | Effect Size<sup>c</sup> |
|-----------------------------|----------------|----|----------------|-------|-------|-------------------------|
| *Within Groups*             |                |    |                |       |       |                         |
| Years of Living Alone       | 102986.968    | 291| 353.907        |       |       |                         |
| *Total*                     | 103848.449    | 293|                |       |       |                         |
| *Between Groups*            | 2157.163      | 6  | 359.527        | 1.010 | .009  | .120                    |
| *Within Groups*             | 103191.046    | 290| 355.831        |       |       |                         |
| *Total*                     | 105348.209    | 296|                |       |       |                         |
| Financial support           | 175.625       | 2  | 87.813         | .251  | .008  | .102                    |
| *Within Groups*             | 98380.995     | 281| 350.110        |       |       |                         |
| *Total*                     | 98556.620     | 283|                |       |       |                         |
Table 4. Fixed Effect ANOVA Results and Eta Squared scores of Quality of Relation (Friends) on QoL

| Dependent Variables                  | SS\(^a\)  | df  | MS\(^b\)  | F      | Sig. | Effect Size\(^c\) |
|--------------------------------------|-----------|-----|-----------|--------|------|-------------------|
| Age of marriage of spouse            |           |     |           |        |      |                   |
| Between Groups                       | 4743.562  | 21  | 225.884   | .591   | .004 | .143              |
| Within Groups                        | 104801.343| 274 | 382.487   |        |      |                   |
| Total                                | 109544.905| 295 |           |        |      |                   |
| Age of widowhood                     |           |     |           |        |      |                   |
| Between Groups                       | 13760.303 | 42  | 327.626   | .865   | .007 | .126              |
| Within Groups                        | 95784.603 | 253 | 378.595   |        |      |                   |
| Total                                | 109544.905| 295 |           |        |      |                   |
| Age of spouse death                  |           |     |           |        |      |                   |
| Between Groups                       | 15680.717 | 43  | 364.668   | .983   | .007 | .144              |
| Within Groups                        | 93102.015 | 251 | 370.924   |        |      |                   |
| Total                                | 108782.732| 294 |           |        |      |                   |
| Years Marital Life                   |           |     |           |        |      |                   |
| Between Groups                       | 17968.201 | 47  | 382.302   | 1.035  | .009 | .164              |
| Within Groups                        | 91576.704 | 248 | 369.261   |        |      |                   |
| Total                                | 109544.905| 295 |           |        |      |                   |
| Years of Spouse Death                |           |     |           |        |      |                   |
| Between Groups                       | 6544.487  | 30  | 218.150   | .560   | .001 | .160              |
| Within Groups                        | 102815.899| 264 | 389.454   |        |      |                   |
| Total                                | 109360.386| 294 |           |        |      |                   |
| Education                            |           |     |           |        |      |                   |
| Between Groups                       | 1512.720  | 6   | 252.120   | .673   | .001 | .114              |
| Within Groups                        | 107452.820| 287 | 374.400   |        |      |                   |
| Total                                | 108965.541| 293 |           |        |      |                   |
| Living.Lonely                        |           |     |           |        |      |                   |
| Between Groups                       | 973.995   | 2   | 486.997   | 1.314  | .000 | .109              |

\(^a\) Sum of Squares, \(^b\) Mean Squares, \(^c\) Effect Size
Table 4. Fixed Effect ANOVA Results and Eta Squared scores of Quality of Relation (Friends) on QoL

| Dependent Variables | SS\(^a\)          | df   | MS\(^b\) | F      | Sig.  | Effect Size\(^c\) |
|---------------------|-------------------|------|----------|--------|-------|-------------------|
| Within Groups       | 107843.951        | 291  | 370.598  |        |       |                   |
| Total               | 108817.946        | 293  |          |        |       |                   |
| Years of Living Alone | 1497.070         | 6    | 249.512  | .668   | .005  | .114              |
| Between Groups      | 108255.624        | 290  | 373.295  |        |       |                   |
| Within Groups       | 109752.694        | 296  |          |        |       |                   |
| Financial support   | 1802.281          | 2    | 901.140  | 2.450  | .008  | .117              |
| Between Groups      | 103349.927        | 281  | 367.793  |        |       |                   |
| Within Groups       | 105152.208        | 283  |          |        |       |                   |
Table 5. Fixed Effect ANOVA Results and Eta Squared scores of Quality of Relation (Children) on QoL

| Dependent Variables                        | SS<sup>a</sup>   | df | MS<sup>b</sup> | F     | Sig. | Effect Size<sup>c</sup> |
|--------------------------------------------|-------------------|----|----------------|-------|------|--------------------------|
| Age of marriage of spouse                  | Between Groups    | 9703.126 | 21 | 462.054 | 1.321 | .001 | .192                |
|                                           | Within Groups     | 95833.384 | 274 | 349.757 |
|                                           | Total              | 105536.510 | 295 |          |      |                   |
| Age of widowhood                           | Between Groups    | 11701.691 | 42 | 278.612 | .751  | .007 | .111                |
|                                           | Within Groups     | 93834.819 | 253 | 370.889 |
|                                           | Total              | 105536.510 | 295 |          |      |                   |
| Age of spouse death                        | Between Groups    | 13028.615 | 43 | 302.991 | .827  | .000 | .124                |
|                                           | Within Groups     | 91945.297 | 251 | 366.316 |
|                                           | Total              | 104973.912 | 294 |          |      |                   |
| Years of Marital Life                      | Between Groups    | 14726.072 | 47 | 313.321 | .856  | .005 | .170                |
|                                           | Within Groups     | 90810.438 | 248 | 366.171 |
|                                           | Total              | 105536.510 | 295 |          |      |                   |
| Years of Spouse Death                      | Between Groups    | 9948.368  | 30 | 331.612 | .919  | .002 | .125                |
|                                           | Within Groups     | 95274.534 | 264 | 360.888 |
|                                           | Total              | 105222.902 | 294 |          |      |                   |
| Education                                  | Between Groups    | 3996.474  | 6  | 666.079 | 1.883 | .004 | .128                |
|                                           | Within Groups     | 101158.229 | 286 | 353.700 |
|                                           | Total              | 105154.703 | 292 |          |      |                   |
| Living Lonely                              | Between Groups    | 401.825   | 2  | 200.912 | .565  | .009 | .121                |
Table 5. Fixed Effect ANOVA Results and Eta Squared scores of Quality of Relation (Children) on QoL

| Dependent Variables | SS  | df  | MS  | F   | Sig. | Effect Size |
|---------------------|-----|-----|-----|-----|------|-------------|
| Within Groups       | 103537.009 | 291 | 355.797 |     |      |             |
| Total               | 103938.833 | 293 |       |     |      |             |
| Years.Living.Alone  |     |     |      |     |      |             |
| Between Groups      | 895.104 | 6   | 149.184 | .413 | .000 | .118        |
| Within Groups       | 104769.139 | 290 | 361.273 |     |      |             |
| Total               | 105664.242 | 296 |       |     |      |             |
| Financial support   |     |     |      |     |      |             |
| Between Groups      | 540.138 | 2   | 270.069 | .765 | .006 | .113        |
| Within Groups       | 99183.777 | 281 | 352.967 |     |      |             |
| Total               | 99723.915 | 283 |       |     |      |             |

The SEM Model of Aging Widows’ QoL and QR

The main variables of the study along with demographic variables were entered in the model using the SEM. The SEM diagram as a flowchart show items interconnected with arrows that are used to indicate the causal model. Solid arrows indicate statistical significance ($p < .05$) and the width of solid arrows indicate the magnitude of the coefficient. As shown in the below figures, the casual model was fitted by the goodness of fit indices. If the RMSEA score is less than 0.05 and other fit indices i.e., AGFI, NFI, and CFI are higher or close to 0.90; the models are fit. According to figures 1 to 4 and out of 11 extraction models, four models with the highest fit index were obtained.

According to the above figures, the obtained models were good based on the main goodness of fit indices (RMSEA $\leq$ 0.05, AGFI $\geq$ 0.90, NFI $\geq$ 0.90, and CFI $\geq$ 0.90.). Furr (2011) (38) indicated that the fit indices should have standardized loadings of 0.80 and more (Furr, 2011). The models have good fit indices as well (figure 1 to 4).

Discussion

The present study was conducted to analyze the quality of relationships and the quality of life of the elderly widows in northeastern Iran in 2021. The results of the present study showed that there is a significant correlation between the quality of relationships in three domains (parents QRP, friends QRF,
and children (kids) QRK), and the quality of life of the elderly widows. According to the Structural Equation Modeling (SEM) on the correlation between QOL and QR, the more the perceived support of the family and friends for the elderly widows is, the higher their quality of life would be. This result consistent with the findings of Costa, Sahin, Kumcağız, and Mahmoud(39-42). Besides, in the field of the effect of three domains of relationships (QRP, QRF, and QRK) on the quality of life of the widows, it was specified that the QRF in widows can leave the most significant effect on their QOL. On the other hand, data analysis showed that one of the most effective factors in QRF can be the years of marital life and years of marriage of widows. The results show that the years of marital life can leave a significant effect on the relationships of widows with others. Women encounter predetermined relations after becoming a widow. This can make challenges to change the relationships or make new relationships.

The previous studies have proved that social interaction and participation of the widows immediately after losing a spouse can be increased because of more interactions of family and friends. Besides, the widows may increase their social participation after releasing spouse-case responsibilities by the renewal of old relationships, enhancement of existing relationships, or making new relationships. However, such supports and interactions may be decreased by aging, and the elderly people, who are widows for a long time, may lose their relationships and become isolated gradually (43). According to the results of the present study, another factor affecting the quality of life of widows was years of widowhood. As many people were widows at least for seven years, and as social relations can leave significant effects on quality of life; it could be found that the quality of life of widows can be decreased by mitigation of their relationships after long-term widowhood.

More than three-fourth of the present study widows (75.9%) were suffering from chronic diseases (hypertension, diabetes, arthrosis, and depression). The previous studies showed that widowhood comes with an increased risk of cardiovascular diseases, diabetes, mortality, depression, anxiety, suicide thoughts, and committing suicide ultimately(44,31,16,7). For example, Lyu et al. have shown that the experience of widowhood is along with downward cognitive process among Korean elderly people. Such damage may be created in delayed response to stressful life events such as widowhood(14). This result is consistent with the findings of previous studies showing that increased years of spouse's death can cause more vulnerability in cognition reduction(45,14). In terms of mental health, the elderly widows can be defined as a vulnerable group compared to married people in the same age group. It has been proved that widows use a considerable amount of depression medicine, have regular visits to physical, and experience more severe types of isolation. Also, widows are hospitalized more than married people of the same age group in years after spouse's death(8). The results of the present study are consistent with these findings. The study showed a significant correlation between increased years of spouse death and decreased QOL of widows.

It has been proved that social support is an underlying indicator in the health-related quality of life (HRQOL) (40). For example, isolation and loneliness play a more fundamental role than decreased financial resources to create negative consequences of widowhood on the mental health of widows(7). Factors, by which social sources may endanger the health n widowhood, include health behavior
management, and providing emotional support. For example, using healthcare is decreased in widows. Hence, social relations empower the behavior by increasing the participation of the widow or providing information on health behaviors. This can finally cause health protection[16]. These findings confirm the need for plans to provide more supports for the widows after their spouse's death (14). This is because; strong sense of belonging and social support is vital for the process of coping with stressful factors since the harmful effects of stress can destroy the physical and mental well-being (9).

In the majority of comparisons, QOL in elderly widows is higher than it in elderly married people(46). In addition to relevant factors of physical and mental health, other factors may be involved in this field, and one of these factors can be education. The present study revealed that more than 80% of widows were illiterate. The findings of Jamadar et al showed a significant difference between QOL of educated and non-educated widows so that the score of QOL in educated widows was significantly higher than non-educated widows(47). According to literature, the negative effects of widowhood on quality of life can be decreased by family relationships, and social supports, and to a lesser extent by education(46).

It is vital to analyze the factors motivating an elderly person (especially if the person is exposed to a stressful condition like widowhood) to participate in new societies and circles to reduce or prevent the social isolation and loneliness in aging(8). The leisure time plans with social nature could be useful means to overcome social barriers, to make new social relations, and to find a way to cope with new social functions(9). Hence, it would be better for the daily aging centers and institutions related to policy-making, social and cultural programs to identify the widows at the first. Then, the institutions should measure their needs on leisure time programs, and make a plan to hold such programs. As studies have shown that widows feel good and welfare when being with other widows(9), the leisure time programs for widows should be specified to them. Through this, they can use the experiences of others to cope with widowhood conditions.

The limitations in this study could be the unavailability of all groups and minorities. Also, due to the Iranian culture, it would be better to measure the relationships with sister, brother, and spouse's family in addition to measurement of quality of relationships with children, friends, and parents. This is because; parents of widows mostly have been died before that a woman becomes a widow, and they may be supported by an older sister or brother or spouse's family. Besides, generalization of the findings of this study to all individuals is not true because of different cultures of societies. Therefore, such studies should be done in other cultures to obtain more comprehensive results.

**Declarations**

**Ethics approval and consent to participate**

All the participants received verbal explanation about the study objectives and procedures and then signed written informed consents for taking part in the study. The participants were also reassured about the anonymity and confidentiality of their information. Also, ethics committee of Shiraz University of Medical Sciences has approved the research with ethical NO: IR.SUMS.REC.1399.196.
The authors confirm that all methods were performed in accordance with the relevant guidelines and regulations i.e. Declaration of Helsinki and STROBE.

Consent for publication

Not applicable.

Availability of data and material

All data generated or analyzed during this study are included in this published article.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

NP has contributed to the design, performed the interviews, and written the Introduction and Method sections; MN has supervised the program and written the sections of Discussion & Conclusion. AA has interpreted and analyzed the data and written the section results. All authors have approved the final manuscript as well.

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**Figures**

**Figure 1**

Conceptual Framework

**Figure 2**

![Diagram](image-url)
Final Structural Equation Model in Predicting QoL by three main Domains of QR Abbreviations: QRP = quality of relationship with parents, QRF = quality of relationship with friends, QRK = quality of relationship with kids, QoL = Quality of Life.

Figure 3

Final Structural Equation Model of the Study Abbreviations: QRF = Quality of Relationship with Friends, QoL = Quality of Life, AMS = Age of Marriage of Spouse, AW = Age of becoming Widow, ADS = Age of Spouse' Death, YML = Years of Marital Life, YSD = Years after the Death of Spouse, Edu. = Education, LL = Living Lonely: Yes/No, YLA = Years of Living Alone, FS = Financial Support.
Figure 4

Final Structural Equation Model of the Study Abbreviations: QRK = Quality of Relationship with her Kids, QoL = Quality of Life, AMS = Age of Marriage of Spouse, AW= Age of becoming Widow, ADS = Age of Spouse' Death, YML = Years of Marital Life, YSD = Years after the Death of Spouse, Edu. = Education, LL = Living Lonely: Yes/No, YLA = Years of Living Alone, FS = Financial Support.