Research Article

HEALTHY AGING RESEARCH

OPEN

The influences of family interaction and spiritual well-being on anxiety and depression among older adults in the United States

Pi-Ming Yeh*

Background: Living with anxiety and depression is a very real and palpable experience for many older adults in the modern day. Facing these conditions as an individual on a day to day basis can be overbearing and relentless. Subjectively one can imagine how difficult either of these conditions can be to face as well as seek aid for. The purpose of this study was to examine the influences of past family interactions related to child rearing techniques as well as current experiences of spiritual well-being on the older adults' anxiety and depression.

Methods: This was a cross sectional, descriptive design. Total 448 older adults were recruited from the community in the US. The mean age was 71.33 (*SD*=7.61). There were 41.1% Male (*n*=184) and 58.9% Female (*n*=264). The structured questionnaires were used to do the data collection. The SPSS 23 version was used to do the data analysis. The descriptive data analysis, Pearson Correlation, and Step-wise Multiple Regressions were used to solve the research questions.

Results: Older adults whose parents used child monitor (r=-0.211, p=0.000), inductive reasoning (r=-0.116, p=0.015), communication (r=-0.145, p=0.002), involvement (r=-0.169, p=0.000) and positive family interaction (r=-0.210, p=0.000) had lower scores of anxiety. Older adults whose parents used inconsistent discipline (r=0.185, p=0.000), harsh discipline (r=0.245, p=0.000) and negative family interaction (r=0.290, p=0.000) had higher scores of anxiety. Older adults whose parents used child monitor (r=-0.279, p=0.000), inductive reasoning (r=-0.190, p=0.000), communication (r=-0.196, p=0.000), involvement (r=-0.208, p=0.000) and positive family interaction (r=-0.280, p=0.000) had lower scores of depression. Older adults whose parents used inconsistent discipline (r=0.182, p=0.000), harsh discipline (r=0.292, p=0.000) and negative family interaction (r=0.322, p=0.000) had higher scores of depression. Older adults who had higher scores of spiritual well-being (r=-0.518, p=0.000), higher scores of faith/belief (r=-0.373, p=0.000), life and self-responsibility (r=-0.418, p=0.000), and higher scores of life satisfaction and self-actualization (r=-0.492, p=0.000) had lower scores of anxiety. Older adults who had higher scores of spiritual well-being (r=-0.597, p=0.000), higher scores of faith/belief (r=-0.434, p=0.000), life and self-responsibility (r=-0.412, p=0.000), and higher scores of life satisfaction and self-actualization (r=-0.623, p=0.000) had lower scores of depression. There was a statistically significant positive relationship between anxiety and depression (r=0.734, p=0.000).

Conclusions: The predictors of older adults' anxiety were negative family interaction, their parents using a child monitor, their spiritual well-being and faith/belief. The predictors of older adults' depression were negative family interaction, their parents using a child monitor, their life satisfaction/ self-actualization and life/self-responsibility. Older adults who had higher scores of experienced negative family interaction had higher scores of anxiety and depression. Older adults who had higher scores of spiritual well-being (including life satisfaction/ self-actualization and life/self-responsibility) and higher scores of experienced child monitor had lower scores of anxiety and depression.

Keywords: Family interaction, Spiritual well-being, Older adults, Depression, Anxiety

Anxiety and depression among US older adults

Anxiety disorders are the most common mental illness in the United States (U.S.), affecting 40 million adults age 18 and older, or 18.1% of the population every year [1]. Anxiety disorders cost the U.S. more than $42 billion a year, almost one-third of the country's $148 billion total mental health bill [2]. It's common for someone with an anxiety disorder to also suffer from depression or vice versa. Nearly one-half of those diagnosed with depression are also diagnosed with an anxiety disorder [1]. The symptoms of depression and anxiety are often accompanied by physical illnesses, deterioration of body function, and loss of self-confidence, social status, low self-acceptance and respect, which can lead to the feelings of low self-esteem, unhappiness and depression [3]. The experiences of loss,

Sponsorships or competing interests that may be relevant to content are disclosed at the end of this article.

School of Nursing & Health Professions, Missouri Western State University, USA

**Corresponding Author. School of Nursing & Health Professions, Missouri Western State University, USA. Tel: (309) 750-2927, Fax: (816)271-5849. Email address: pimingyeh@yahoo.com (P.M. Yeh).*

Copyright © 2018 Yeh PM. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Healthy Aging Research (2018) 7:10

Received 18 April 2018; Accepted 04 October 2018

Published online 10 October 2018

DOI: 10.12715/har.2018.7.10

chronic disease, disability and bereavement are important risk factors for anxiety and depression in older adults [4,5]. It is estimated that 20% of people age 55 years or older experience some type of mental health concern [6]. The most common conditions include anxiety, mood disorders (such as depression or bipolar disorder), and severe cognitive impairment [6]. Mental health issues are often risk factors for suicidal ideation. Older men have the highest suicide rate of any age group [7]. Men aged 85 years or older have a suicide rate of 45.23 per 100,000, compared to an overall rate of 11.01 per 100,000 for all ages [7]. Anxiety and depression have inverse relationships with psychological well-being and have positive relationships with suicidal ideation [8]. Anxiety, depression, and harsh parenting discipline were significant predictors of suicidal ideation [8]. The purpose of this study was to examine the influences of past family interactions related to child rearing techniques and current experiences of spiritual well-being on older adults' anxiety and depression.

Family interaction

Lack of a good family environment has been identified as an important risk factor for mental illness [9,10]. People who have been physically or sexually abused, those who have been forced to use drug or alcohol by their family were more likely to develop mental illness [11]. Negative communication induces negative emotion and decreases love interaction as well as loses hope of life [12]. These issues contribute to anxiety, depression, and suicidal ideation [13]. Emotional problems not only cause mental illnesses, but also cause cancer and chronic illness [14]. A lot of family violence comes from miscommunication and misunderstanding [15].

Most family interaction studies focus on the college students or adolescents [8]. Few studies examine the relationships among older adults' family interaction, anxiety and depression. Positive family interaction provides a stable framework within which the individual is safe to make important decisions, debrief and feel validated and supported.

Individuals who had positive family interactions (e.g. communication and involvement) reported lower rates of suicidal behaviors [13,16]. Conversely, negative family interaction such as harsh parenting had a negative impact on people's psychological well-being. Harsh parenting, inconsistency discipline, and authoritarian parenting were associated with increasing risk of suicidal ideation [13,17]. The power assertive parenting and high levels of physical punishment decreased psychological well-being [18,19]. Yeh and Chiao indicated that positive family interaction had statistically significant inverse relationships with anxiety and depression [12]. These positive family interactions included inductive reasoning, communication, and involvement [12]. Negative parental rearing attitude including inconsistent discipline and harsh discipline had statistically significant positive relationships with anxiety and depression [12].

Spiritual well-being

The definition of spiritual well-being is generally considered to be the search for meaning and purpose in human existence, leading one to strive for a state of harmony with oneself and others while working to balance inner needs with the rest of the world [20]. In this study, the spiritual well-being was measured from three domains: 1. Faith/belief, 2. Life/self-responsibility and 3. Life satisfaction/self-actualization. Spiritual well-being may cover relationships with self and others, existential issues and specific religious and/or spiritual issues [21]. Spirituality, religion and personal beliefs may provide people with a sense of well-being by giving structure to their experience, helping them cope with difficulties and ascribing meaning to personal questions [21]. Spirituality may contain dimensions of spiritual well-being (e.g. peace), spiritual cognitive behavioral context (spiritual beliefs, spiritual activities and spiritual relationships) and spiritual coping [22]. Connecting with oneself and others in a meaningful way is at the core of self-transcendence and is crucial for obtaining spiritual well-being [23].

Yeh and Chiao found that spiritual well-being had a statistically significant positive relationship with psychological well-being [24], but anxiety and depression had statistically significant inverse relationships with psychological well-being [24]. Yeh and Chiao also reported that spiritual well-being had a statistically significant inverse relationship with anxiety and depression [12]. Alcohol use because of negative emotion had a statistically significant positive relationship with anxiety and an inverse relationship with spiritual well-being [24]. Higher scores on spiritual well-being and higher scores on problem-focused disengagement coping were found to predict significantly greater psychological well-being [24]. Most previous studies focused on the adolescents' and patients' anxiety and depression. Few study focused on the influences of family interaction and spiritual well-being on older adults' anxiety and depression. Therefore, the purpose of this study was to examine the influences of past family interactions related to child rearing techniques and current experiences of spiritual well-being on the older adults' anxiety and depression.

The research framework used for this study was the Development of Personality and Psychological Well-Being Model that was developed by Yeh and Chiao [13] (**Figure 1**). This framework indicates that a person's personality is developed by biological temper, family interaction, and cognitive learning. People with different personalities use different coping strategies and these results in either good psychological well-being or suicidal ideation. During this process, stressors and spiritual well-being influence the outcome variables [13].

The specific research questions addressed were the following:

- What was the relationship between older adults' family interaction and their anxiety?
- What was the relationship between older adults' family interaction and their depression?
- What was the relationship between older adults' spiritual well-being and their anxiety?
- What was the relationship between older adults' spiritual well-being and their depression?
- How much of older adults' anxiety was predicted by their family interaction and spiritual well-being?
- How much of older adults' depression was predicted by their family interaction and spiritual well-being?

Methods

Research design

A cross-sectional descriptive design was used to examine the influences of family interaction and spiritual well-being on the older adults' anxiety and depression. Significant factors of older adults' anxiety and depression were also examined. Structured questionnaires were used to collect data from community living older adults residing in the Midwestern US.

Sample, setting, and data collection

The convenience sample consisted of 448 older adults including 184 (41.1%) males and 264 (58.9%) females. The mean age was 71.33 years old (*SD*=7.61). Prior to data collection the study was approved

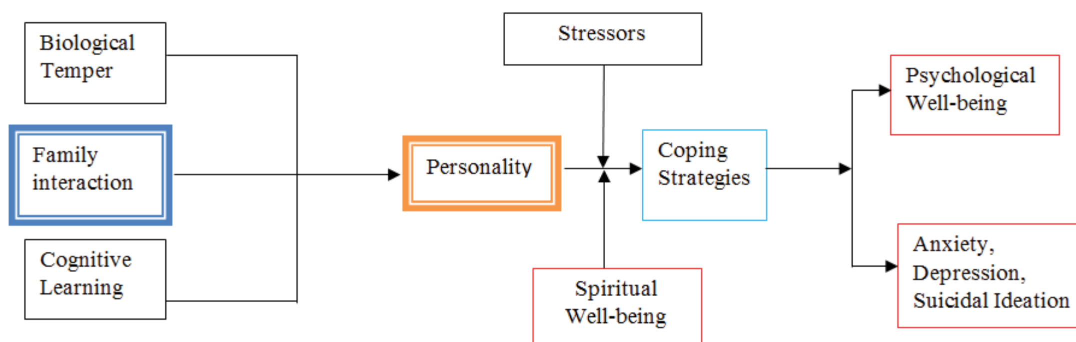

Figure 1. The development of personality and psychological well-being.

Table 1
The internal consistency reliability of instruments (*N*=448)

Variables	Instruments	Items	Cronbach's Alpha	Range of Scores
Anxiety	Hamilton Anxiety Scale	42	0.957	0-168
Depression	Zung Depression Scale	20	0.81	20-80
Family Interaction	Iowa Family Interaction Rating Scales	29	Positive:0.934 Negative:0.688	29-145
Spiritual Well-being	Jarel Spiritual Well-being Scale	21	0.898	21-126

by the Institution of Research Board (IRB). Participants were made aware of the voluntary nature of the study and their right to choose not to participate or their right of unprejudiced withdrawal. Throughout the research project all ethical requirements were adhered to and no adverse incidents arose. The sample size was determined by Power Analysis Computer Software for regression models: (a) the significance level set α at 0.05 and power (1- *β*) at 0.80; (b) estimating the four covariates (age, gender, income, and mental health) yielded an R^2 of 0.06; (c) estimating the four main variables (family interaction, spiritual well-being, anxiety, and depression) yielded an additional R^2 (R^2 change) of 0.13. In other words, the four covariates entered accounted for 6% of the variance; the four main variables accounted for an additional 13% of the variance. Using these criteria, the sample size was estimated to be 90 participants. In this study, the sample size is 448 that is more than 90 participants.

Instruments

Data were collected using four instruments, all of which were selected for their reliability and validity. The internal consistency reliabilities of instruments have been described. All of the instruments had good internal consistency reliabilities. Most of their Cronbach's Alpha values were greater than 0.7 (range: 0.81-0.957), and only the internal consistence reliability of Negative Family Interaction was 0.688 (**Table 1**).

Family Interaction was measured using the Iowa Family Interaction Rating Scales (IFIRS) [25]. The IFIRS in this study was used to measure parenting attributes. There were 29 questions including two sub sections. The positive rearing attitude sub section has 21 questions and five subscales (Child Monitoring, Inductive Reasoning, Communication, Positive Reinforcement and Involvement). The negative rearing attitude sub section has two subscales: Inconsistent Discipline and Harsh Discipline, including 8 questions. Items were scored on a five point scale ranging from (1) Never, (2) Once in a while, (3) Sometimes, (4) A lot of time, and (5) Always. For positive rearing attitude subscales, higher scores indicate more positive rearing attitude. The maximum was 105 points, and minimum was 21 point for positive rearing attitude subscales. The Cronbach's Alpha was 0.934 for positive rearing attitude subscales in this study. For the negative rearing sub section, higher scores indicate the likelihood of inconsistent discipline and harsh discipline. In this sub section, the maximum was 36 points, and minimum was 8 points. The Cronbach's Alpha in this study was 0.688 for the negative rearing sub section (**Table 1**).

Spiritual Well-Being Participants' spiritual well-being was measured by the 21 item Jarel Spiritual Well-Being Scale [26]. Three concepts (Faith/belief dimension, Life/self-responsibility, and Life satisfaction/Self-actualization) were assessed by this questionnaire. The items were scored on a six point Likert-type scale ranging from (1) strongly disagree to (6) strongly agree. Higher scores indicate better spiritual well-being. The maximum total score is 126, and the minimum score is 21. Evidence for the validity and reliability of the scale were examined by Hungelmann et al., 1996. The Cronbach's alpha (internal consistency reliability) was 0.898 in this study.

Anxiety was measured by the Hamilton Anxiety Scale (HAS) [27]. HAS included 42 questions with a five point scale ranging from (0) Not Present, (1) Mild, (2) Moderate, (3) Severe, and (4) Very Severe. The higher the score, the higher the level of anxiety. Maximum scores were 168 and the minimum score was 0. The Cronbach's Alpha for the HAS was 0.957 in this study (**Table 1**).

Depression was measured using the Zung Depression Scale (ZDS) [28]. Total 20 questions were scored on a four point scale ranging from (1) None or Little, (2) Some, (3) Good Part, and (4) Most or All. Higher scores indicated feeling more depressed. Maximum scores were 80 and the minimum were 20. The Cronbach's Alpha for the ZDS was 0.81 in this study (**Table 1**).

Data analysis

Data analyses were conducted using the Statistic Package for the Social Sciences (SPSS) PC + Version 23.0. Descriptive statistics (mean, SD, range, frequency, and percent) were used to describe

Table 2

Demographic description data of older adults (*N*=448).

Variable	n	%	M	SD
Gender				
Male	184	41.1		
Female	264	58.9		
Age			71.33	7.61
Anxiety (0-10)			2.63	2.25
Depression(0-8)			2.09	2.1
Total Mental Illness Diagnosis				
0	262	58.5		
1	112	25.0		
2	47	10.5		
3	23	5.1		
4	4	0.9		
Anxiety	120	26.8		
Depression	93	20.8		
Mania	3	0.7		
Substance use	15	3.3		
Mood Disorder	17	3.8		
Impulse Control	17	3.8		
Eating Disorder	20	4.5		
Schizophrenia	2	0.4		
Suicide	3	0.7		
Received Depression Treatment	74	16.5		
Education				
Middle School	14	3.1		
High School	230	51.3		
College	126	28.1		
Graduate	78	17.4		
Race				
White	409	91.3		
African	18	4		
American Indian	9	2		
Asian	4	0.9		
Marriage				
Married	258	57.6		
Widowed	96	21.4		
Divorced	65	14.5		
Single	23	5.1		
Separated	6	1.3		
Religion				
Believe in Jesus Christ	402	89.7		
Not religious	32	7.1		
Jewish	2	0.4		
Buddhist	1	0.2		
Taoism	1	0.2		
Islam	1	0.2		
Other	9	2		
Children (0-14)				
2	142	31.7		
3	104	23.2		
4	66	14.7		
Job Status				
Retired	284	63.4		
Full Time	70	15.6		
Part Time	68	15.2		
Unemployed	26	5.8		
Income per month				
Below $1000	67	15.0		
$1000-1999	105	23.4		
$2000-2999	101	22.5		
$3000-3999	57	12.7		
$4000-4999	42	9.4		
$5000-5999	22	4.9		
$6000-6999	7	1.6		
Above $7000	47	10.5		

Table 3

Descriptions of the main variables (N=448).

Variable	Min	Max	M	SD
Positive Family Interaction1	21	105	70.05	16.59
Negative Family Interaction2	8	36	16.86	5.06
Spiritual Well-being3	31	126	102.09	16.56
Anxiety	0	133	34.93	23.97
Depression	23	74	39.68	8.31

1.Positive Family Interaction was the total scores of using a child monitor, inductive reasoning, communication, positive reinforcement, and involvement.

2.Negative Family Interaction was the total scores of inconsistent discipline and harsh discipline.

3.Spiritual Well-being was the total scores of faith/belief, life and self-responsibility, and life satisfaction and self-actualization.

the study sample and main variables. The internal consistency reliabilities of instruments were examined in this study. Pearson's Correlation was used to examine the relationships of main variables. Stepwise Multiple Regression was used to examine the significant predictors of anxiety and depression.

Results

Sample characteristics

Participants' mean age was 71.33 years (*SD*=7.61). Most participants were female (*n*=264, 58.9%) and married (*n*=258, 57.6%). Four hundred and nine (91.3%) were White. Four hundred and two (89.7%) believed in Jesus Christ. Most of the older adults did not report having any mental illness (*n*=262, 58.5%). A total of 120 older adults (26.8%) reported being diagnosed with anxiety and 93 (20.8%) older adults had depression. Two Hundred and six (45.9%) participants had monthly income between US$1,000- US$2,999 (**Table 2**).

Descriptions of major variables

Table 3 illustrates that the scores of older adults' anxiety ranged from 0 to 133. Overall, participants expressed low levels of anxiety (M=34.93, *SD*=23.97). Depression scores ranged from 23 to 74. Participants expressed medium levels of depression (M=39.68, *SD*=8.31). Positive family interaction scores ranged from 21 to 105. Participants expressed medium high levels of positive family interaction (*M*=70.05, *SD*=16.59). Participant scores related to negative family interaction ranged from 8 to 36. Participants expressed medium high levels of negative family interaction

Table 4

Pearson's Correlation: The influences of older adults' family interaction and spiritual well-being on their anxiety (*N*=448).

Variable	Anxiety	
	r	*p*
Family Interaction		
Child monitor	-0.211***	0.000
Inconsistent Discipline	0.185***	0.000
Harsh Discipline	0.245***	0.000
Inductive Reasoning	-0.116*	0.015
Communication	-0.145**	0.002
Positive Reinforcement	-0.031	0.517
Involvement	-0.169***	0.000
Positive family interaction	-0.210***	0.000
Negative family interaction	0.290***	0.000
Spiritual Well- being	-0.518***	0.000
Faith/belief	-0.373***	0.000
Life/self-responsibility	-0.418***	0.000
Life Satisfaction/ self- actualization	-0.492***	0.000
Depression	0.734***	0.000

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

(M=16.86, *SD*=5.06). Spiritual well-being scores ranged from 31 to 126, illustrating high levels of Spiritual Well-being (M=102.09, *SD*=16.56) (**Table 3**).

The Pearson Correlations between the family interaction and anxiety

Table 4 demonstrates that the following variables of family interaction had significantly inverse relationships with older adults' anxiety: using a child monitor (r=-0.211, p=0.000), inductive reasoning (r=-0.116, p=0.015), communication (r=-0.145, p=0.002), involvement (r=-0.169, p=0.000) and positive family interaction (r=-0.210, p=0.000). Older adults whose parents used a child monitor, inductive reasoning, communication, involvement and positive family interaction had lower scores on anxiety. The following variables of family interaction had significantly positive relationships with older adults' anxiety: inconsistent discipline (r=0.185, p=0.000), harsh discipline (r=0.245, p=0.000) and negative family interaction (r=0.290, p=0.000). Older adults whose parents used inconsistent discipline, harsh discipline and negative family interaction had higher score on anxiety (**Table 4**).

The Pearson Correlations between the family interaction and depression

For family interaction, the following variables had significantly inverse relationships with older adults' depression: using a child monitor (r=-0.279, p=0.000), inductive reasoning (r=-0.190, p=0.000), communication (r=-0.196, p=0.000), involvement (r=-0.208, p=0.000) and positive family interaction (r=-0.280, p=0.000). Older adults whose parents used a child monitor, inductive reasoning, communication, involvement, and positive family interaction had lower score on depression (**Table 5**). The following variables of family interaction had significantly positive relationships with older adults' depression: inconsistent discipline (r=0.182, p=0.000), harsh discipline (r=0.292, p=0.000) and negative family interaction (r=0.322, p=0.000). Older adults whose parents used inconsistent discipline, harsh discipline and negative family interaction had higher scores on depression (**Table 5**).

The Pearson Correlations between the spiritual well-being and anxiety

For spiritual well-being, the following variables had significantly inverse relationships with older adults' anxiety: spiritual well-being (r=-0.518, p=0.000), faith/belief (r=-0.373, p=0.000), life and self-responsibility (r=-0.418, p=0.000) and life satisfaction and self-actualization (r=-0.492, p=0.000). Older adults who had higher scores of spiritual well-being, higher scores of faith/belief, higher scores of life and self-responsibility, and higher scores of life satisfaction and self-actualization had lower scores on anxiety (**Table 4**).

The Pearson Correlations between the spiritual well-being and depression

For spiritual well-being, the following variables had significantly inverse relationships with older adults' depression: total score of spiritual well-being (r=-0.597, p=0.000), higher scores of faith/belief (r=-0.434, p=0.000), life and self-responsibility (r=-0.412, p=0.000), and higher scores of life satisfaction and self-actualization (r=-0.623, p=0.000). Older adults who had higher score of spiritual well-being, higher score of faith/belief, higher score of life and self-responsibility and higher score of life satisfaction and self-actualization had lower score on depression (**Table 5**). There was a statistically significant positive relationship between anxiety and depression (r=0.734, p=0.000) (**Table 4**).

Predictors of older adult's anxiety and depression

According to the Stepwise Multiple Regression model 1 the significant predictors accounting for 10.5% of anxiety variance were: negative family interaction (β=0.246, p=0.000) and using a child monitor (β=-0.149, p=0.002) (**Table 6**). Model 2 the significant predictors accounting for 29.8% of the anxiety variance were: spiritual well-being (β=-0.835, p=0.000) and faith/belief (β=0.360, p=0.000) (**Table 6**).

According to the Stepwise Multiple Regression model 1 the significant predictors accounting for 14.1% of the depression variance were: negative family interaction (β=0.264, p=0.000) and using a child monitor (β=-0.202, p=0.000) (**Table 7**). Model 2 the significant predictors accounting for 42% of the depression variance

Table 5

Pearson's Correlation: The influences of older adults' family interaction and spiritual well-being on their depression (N=448).

Variable	Depression	
	r	*p*
Family Interaction		
Child monitor	-0.279***	0.000
Inconsistent Discipline	0.182***	0.000
Harsh Discipline	0.292***	0.000
Inductive Reasoning	-0.190***	0.000
Communication	-0.196***	0.000
Positive Reinforcement	-0.065	0.172
Involvement	-0.208***	0.000
Positive family interaction	-0.280***	0.000
Negative family interaction	0.322***	0.000
Spiritual Well- being	-0.597***	0.000
Faith/belief	-0.434***	0.000
Life/self-responsibility	-0.412***	0.000
Life Satisfaction/ self- actualization	-0.623***	0.000

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Table 6

Stepwise multiple regression: The predictors of older adults' anxiety (*N*=448)

	Anxiety		
	ß	*t*	
Model 1			
Negative family interaction	0.246	5.244***	R^2=0.105
Child Monitor	-0.149	-3.182**	*F*(*df*=2,444) =25.910***
Model 2			
Spiritual Well-being	-0.835	-10.021***	R^2=0.298
Faith/belief	0.36	4.324***	*F*(*df*=2,444) =94.274***

*p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.001

Table 7

Stepwise multiple regression: The predictors of older adults' depression (N=448)

	Depression		
	ß	*t*	
Model 1			
Negative family interaction	0.264	5.747***	R^2=0.141
Child Monitor	-0.202	-4.401***	*F*(*df*=2,445) =36.621***
Model 2			
Life Satisfaction/ self-actualization	-0.546	-13.850***	**R^2=0.420**
Life/self-responsibility	-0.193	-4.908***	***F*(*df*=2,445) =161.116*** **

*p ≤ 0.05, **p ≤ 0.01, ***p ≤ 0.001

were: Life Satisfaction/ self-actualization (*β*=-0.546, *p*=0.000) and life/self-responsibility (*β*=-0.193, *p*=0.000) (**Table 7**). Older adults who had higher scores of experienced negative family interaction had higher scores on anxiety and depression. Older adults who had higher scores on spiritual well-being (including life satisfaction/ self-actualization and life/self-responsibility) and higher scores on experienced child monitor had lower scores on anxiety and depression.

Discussion

The influences of family interaction on older adults' anxiety and depression

According to the results of this study, older adults' anxiety and depression had significant relationships with their family interaction including using a child monitor, inductive reasoning, communication, involvement, positive family interaction, as well as inconsistent discipline, harsh discipline and negative family interaction. Older adults whose parents used positive family interaction when they were young, for example: using a child monitor, inductive reasoning, communication, and involvement, had lower scores on anxiety and depression. In contrast, older adults whose parents used negative family interaction when they were young, for example: inconsistent discipline and harsh discipline, older adults had higher level of anxiety and depression. The result is similar to the Yeh's 2016 findings with Australian nursing students [8] that positive family interaction had a significantly positive association with psychological well-being and a significantly negative association with suicidal ideation [8]. The result is also similar to the findings of Yeh and Chiao's study among college students in the US in 2013 [13] that the higher the scores of parents' inconsistent discipline and negative child rearing attitudes plus the lower the score of communication, the lower were the scores of their children's psychological well-being and the higher their scores on suicidal ideation [13]. The higher parents' score of harsh discipline and the lower their score of inductive reasoning, the lower participants' score of psychological well-being got and the higher they scored on suicidal ideation [13]. Also, the higher the score of parents' involvement and the total scores of positive rearing attitude, the higher the score of participants' psychological-well-being [13]. The previous study's participants were college students in Australia and in the US, not older adults in the US. Few studies have reported the relationships of older adults' family interaction with their anxiety and depression in the US. From these results, family interaction is an important factor to influence a person's anxiety and depression level not only during their adolescent stage, but also in the end of life stage [29].

Most of Family Interaction's variables had statistically significant relationships with anxiety and depression, but only "Positive Reinforcement" variable did not have a statistically significant relationship with anxiety and depression. The question of the "Positive Reinforcement" was described as "How often did your parents give you a reward like money or something else you would like when you got a good grades, did chores, or something like that?" The participants answered 1=Never, 2=Once in a while, 3=Some Times, 4=A lot of time and 5=Always. There were 127 (28.35%) participants who never have received positive reward from parents (Group A), and 320 (71.43%) participants have received at least once of positive reward from parents (Group B). Although the Group A had higher anxiety level (*M*=37.57, *SD*=28.99) and higher depression level (M=40.41, *SD*=9.43) than group B's anxiety level (M=33.89, *SD*=21.62) and depression level (M=39.38, *SD*=7.82), there was no statistically significant difference in t test.

Stary et al. compared the disciplines techniques: 1. Time-out, 2. Response cost, 3. Positive reinforcement and 4. Spanking among 4 groups of children with ADHD, Autistic Disorder or no diagnosis or other diagnosis [30]. Positive reinforcement and response cost were both rated as significantly more acceptable than time-out and spanking, but they were not rated significantly different from each other [30]. Also, time-out was rated as significantly more acceptable than spanking. These results suggest that parents find response cost and positive reinforcement as the most acceptable behavior management techniques, regardless of a child's diagnosis [30].

The predictors of anxiety were negative family interaction (*β*=0.246, *p*=0.000) and using a child monitor (*β*=-0.149, *p*=0.002). Negative family interaction (*β*=0.264, *p*=0.000) and using a child monitor (*β*=-0.202, *p*=0.000) also were the significant predictors of older adults' depression. Older adults who had higher scores of experienced negative family interaction had higher scores on anxiety and depression. Older adults who had higher scores of experienced child monitor had lower scores on anxiety and depression. Negative family interaction included inconsistent discipline and harsh discipline in this study. This result is similar to Ai, Weiss, and Fincham's study in 2014 [31]. Ai et al. indicated that negative interactions were associated with increased likelihood of general anxiety disorder and suicidal ideation, whereas Family Cohesion seemed to be protective against general anxiety disorder among Latina Americans [31]. Lincoln et al. investigated 786 African Americans aged 55 years and older and indicated that negative interaction was significantly and positively

associated with the odds of having a lifetime mood disorder, a lifetime anxiety disorder and the number of lifetime mood and anxiety disorders [32].

Brand-Gothelf et al. examined the self-perceptions of children (aged 7-13years) with major depressive disorder (*n*=30), anxiety disorders (*n*=37) and non-psychiatric controls (*n*=32) [33]. The child–mother dyad was observed during structured interactions [33]. Their results indicated that self-perceptions of depressed children were significantly more negative than those of children with anxiety and the control group [33]. Depression severity negatively correlated with the child's self-perception and positively correlated with perceptions of the mother as being more rejecting, controlling, less accepting and less allowing autonomy, and of the family as being less cohesive [33]. Depression severity was also positively associated with the child's hostile attitude towards the mother during the interactions [33].

The Influences of Spiritual Well-being on Older Adults' Anxiety and Depression

In this study, older adults who had higher scores on spiritual well-being, higher scores on faith/belief, higher scores on life and self-responsibility, and higher scores on life satisfaction and self-actualization had lower scores on anxiety and depression (**Table 4 and 5**). The results are similar to the study of Yeh and Chiao's study in 2015 among US college students [12,29]. Yeh and Chiao indicated that anxiety had statistically significant inverse relationships with total scores on the spiritual well-being, faith/belief, life/self responsibility, and life satisfaction/self-actualization [12,29]. Increasing the total scores of the Spiritual well-being and its three subscales, college students had lower level of anxiety [12,29]. The results are also similar to Yeh's study [8]. Spiritual well-being had statistically significant positive relationships with psychological well-being [8].

In this study, spiritual well-being and faith/belief were the significant predictors of older adults' anxiety (**Table 6**). Life Satisfaction/ self-actualization and life/self-responsibility were the significant predictors of older adults' depression (**Table 7**). Older adults who had higher scores on spiritual well-being (including life satisfaction/ self-actualization and life/self-responsibility) had lower scores of anxiety and depression. These results are similar to Feldman's study [34]. Feldman used spiritual healing (a randomized clinical trial) among 41 patients with cardiovascular disease [34]. Feldman's results indicated that the patients received spiritual healing interventions had significant improvement with lower anxiety level, lower muscle tension, higher scores of well-being and higher level of peripheral oxygen saturation than patients in the control group, but there was no significant difference of depression level between interventional group and control group [34]. Life Satisfaction and self-actualization are important for older adults when they reflect on their hard work in their lives. Meaning in life has positive significant relationships with self-actualization and personal growth initiative [35]. Abu-Raiya et al. indicated that happiness had significantly positive relationships with religious support, religious hope, religious commitment and life sanctification [36]. Happiness had significantly inverse relationships with religious/spiritual struggle and depressive symptoms [36].

Johnson et al. investigated "which domains of spirituality were associated with anxiety and depression in patients with advanced illness?"[37] They indicated that greater spiritual well-being, including both beliefs about the role of faith in illness and meaning, peace, and purpose in life were associated with fewer symptoms of anxiety ($p \leq 0.001$) and depression ($p<0.001$) [37]. Greater past negative religious experiences were associated with more symptoms of anxiety ($p=0.04$) and depression ($p=0.004$) [37]. Therefore, seriously ill patients, current spiritual well-being and past negative religious experiences were associated with symptoms of anxiety and depression [37,38].

In this study, Factor I of Spiritual Well-being Scale was Faith/belief dimension. Higher scores on Faith/belief dimension indicated more spiritual well-being. The example questions for this subscale were (1) Prayer is an important part of my life and (2) I find meaning and purpose in my life. The mean score of this subscale was high (M=30.31, *SD*=6.73, Range=6 - 36). From this data, the participants had high scores of faith/belief and that helped older adults to decrease their anxiety.

Limitations

This study has three limitations that are important to consider in relation to the findings and implications for future research. First, the cross-sectional design does not provide insights on the differences of the older adult's anxiety, depression, family interaction, and spiritual well-being between the population who live in the hospital and community. Second, the sample was recruited from a single community in the U.S., so the generalizability of this study is limited. Third, the participants in this study were voluntary, thus the results of this study are only usable among patients who are willing to share their experiences.

Conclusion

Based on the findings of this study, there were 186 (41.52%) older adults diagnosed with at least one mental illness although they live in the community. Recognition and assessment of the importance of the effects of family interaction and spiritual well-being on older adults' anxiety and depression are often neglected in the research literature. The finding of this cross-sectional study indicates that better family interaction and better spiritual well-being were associated with lower anxiety and lower depression in older adults in the US. Future studies with larger samples would provide greater insights on the complexity of the interrelationships among family interaction and spiritual well-being on older adults' anxiety and depression. In addition, longitudinal studies would also further our understanding of the effects of family interaction and spiritual well-being on older adults' anxiety and depression at different time points. Future research can compare the differences of psychological well-being and suicidal ideation between older adults with and without mental illness. The researchers could also develop the interventional studies to improve family interaction and spiritual well-being in order to decrease older adults' anxiety and depression.

References

[1] Anxiety and Depression Association of America. National institute of mental health: facts and statistics 2017.
[2] Anxiety and Depression Association of America. USA college students' anxiety and depression 2015.
[3] Surakarn A, Saenubol K, Charupheng M. Depression and anxiety disorders in the elderly: stories from the caregivers. Int J Behav Sci. 2016; 11:63-76.
[4] Kingstone T, Burroughs H, Bartlam B, *et al*. Developing a community-based psycho-social intervention with older people and third sector workers for anxiety and depression: a qualitative study. BMC Fam Pract. 2017;18:77.
[5] Vink D, Aartsen MJ, Schoevers RA. Risk factors for anxiety and depression in the elderly: a review. J Affect Disord. 2008;106:29-44.
[6] American Association of Geriatric Psychiatry. Geriatrics and mental health-the facts 2008.
[7] National Center for Injury Prevention and Control, Centers for Disease Control and Prevention. Web-based injury statistics and query reporting system (WISQARS) (Online) 2018.

[8] Yeh PM, Moxham L, Patterson C, *et al*. The influences of australian nursing students' anxiety, depression, personality and family interaction on their psychological well-being and suicidal ideation. J Behav Ther Mental Health. 2016;1:1-11.
[9] Loon L, Ven M, Doesum K, *et al*. The relation between parental mental illness and adolescent mental health: the role of family factors. J Child Fam Stud. 2014;23:1201-14.
[10] Patterson JE, Vakili S. Relationships, environment, and the brain: how emerging research is changing what we know about the impact of families on human development. Fam Proc. 2014;53:22-32.
[11] Hardt J, Herke M, Schier K. Suicidal ideation, parent-child relationships, and adverse childhood experiences: a cross-validation study using a graphical markov model. Child Psychiatry Human Develop. 2011;42:119-33.
[12] Yeh PM, Chiao CH. The influences of spiritual well-being, parental rearing attitude, and coping strategies on USA college students' anxiety and depression. In book: Psycholog Health Need Res Develop. 2015;6:117-30.
[13] Yeh PM, Chiao CH. The influences of parents' rearing attitude, personality and coping strategies on psychological well-being and suicidal ideation among college students. In book: Psychology of Well-Being: Theory, Perspectives and Practice. 2013;1:1-18.
[14] Townsend MC. Essentials of psychiatric mental health nursing. 2016. F.A. Davis. Philadelphia.
[15] Dobson JC. Effective communication with couple. Family Talk. 2017.
[16] Rusu IR, Cosman D, Neme[illegible] B. Family-protective factor to prevent suicidal behavior in adolescents. Human Vet Med. 2012;4:103-6.
[17] Lai KW, McBride-Chang C. Suicidal ideation, parenting style, and family climate among Hong Kong adolescents. Int J Psychol. 2001;36:81-7.
[18] Newland LA. Family well-being, parenting, and child well-being: pathways to healthy adjustment. Clin Psychol. 2015;19:3-14.
[19] Bosmans G, Braet C, Beyers W, *et al*. Parents' power assertive discipline and internalizing problems in adolescents: the role of attachment. Parenting: Sci Pract. 2011;11:34-55.
[20] Chobdee J. Spiritual wellness. The University of California, Riverside.
[21] Hall S, Beatty S. Assessing spiritual well-being in residents of nursing homes for older people using the FACIT-Sp-12: A cognitive interviewing study. Quality Life Res. 2014;23:1701-11.
[22] Gijsberts MJHE, Echteld MA, Jenny TS, *et al*. Spirituality at the end of life: conceptualization of measurable aspects-A systematic review. J Palliat Med. 2011;14:852-63.
[23] Haugan G, Rannestad T, Hammervold R, *et al*. The relationships between self-transcendence and spiritual well-being in cognitively intact nursing home patients. Int J Old People Nurs. 2014;9:65-78.
[24] Yeh PM, Chiao CH. The impact of spiritual well-being, coping strategies, income and alcohol use on the psychological well-being of college students in the usa. EC Psycholand Psychiat. 2018;7:3-10.
[25] Melby J, Conger R, Book R, *et al*. The iowa family interaction rating scales. Institute for Social and Behavior Research, Iowa State University, Ames, IA. 1988.
[26] Hungelmann J, Kenkel-Rossi E, Klassen L, *et al*. Focus on spiritual well-being: harmonious interconnectedness of mind-body-spirit-use of the JAREL spiritual well-being scale. Geriat Nurs. 1996;17:262-66.
[27] Hamilton M. The assessment of anxiety states by rating. BMJ Psychol. 1959;32:50-5.
[28] Zung WWK. A self-rating depression scale. Arch Gen Psychiat. 1965;12:63-70.
[29] Yeh PM, Chiao CH. The comparisons of psychological well-being, suicidal ideation, using alcohol, and coping strategies between nursing students and business students. Adv Psychol Res. 2015;4:55-70.
[30] Stary AK, Hupp SDA, Jewell JD, *et al*. Parent acceptability of time-out, spanking, response cost, and positive reinforcement. Behav Therap. 2016;39:112-17.
[31] Ai AL, Weiss SI, Fincham FD. Family factors contribute to general anxiety disorder and suicidal ideation among Latina Americans. Women's Health Issue. 2014;24:e345-52.
[32] Lincoln KD, Taylor RJ, Bullard KM, *et al*. Emotional support, negative interaction and DSM IV lifetime disorders among older african americans: findings from the national survey of american life (NSAL). Int J Geriat Psychiat. 2010;25:612-21.
[33] Brand-Gothelf A, Yoeli-Bligh N, Gilboa-Schechtman E, *et al*. Perceptions of self, mother and family and behavior of prepubertal depressed children. Euro Psychiat. 2015;30:69-74.
[34] Feldman E. Spiritual healing: a randomized clinical trial. Integ Med Alert. 2017;20:10-13.
[35] Ivtzan I, Chan CPL, Gardner HE, *et al*. Linking religion and spirituality with psychological well-being: examining self-actualisation, meaning in life, and personal growth initiative. J Religion Health. 2013;52:915-29.
[36] Abu-Raiya H, Pargament KI, Krause N. Religion as problem, religion as solution: religious buffers of the links between religious/spiritual struggles and well-being/mental health. Quality Life Res. 2016;25:1265-74.
[37] Johnson KS, Tulsky JA, Hays JC, *et al*. Which domains of spirituality are associated with anxiety and depression in patients with advanced illness?. J Gen Intern Med. 2011;26:751-58.
[38] Borenstein M, Rothstein H, Cohen J, *et al*. SamplePower (release 2.0) [Computer Software]. (2000). Chicago, IL: SPSS Inc.