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TEMPLES: A Faith-based Intervention to Increase the Quality of Life of Women with Cardiovascular Disease

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Abstract:	Heart disease is the leading cause of death for Americans. Advanced health care providers located in rural North Carolina implemented a six-session faith-based intervention, called TEMPLES. Evidence-based health-improvement measures, combined with spiritual guidance, promoted both faith and health during six online classes. The four volunteer healthcare professionals who led the TEMPLES implementation were interviewed after the program, and a content analysis revealed their thoughts regarding personal spiritual growth and satisfaction with program implementation. Mean scores on the WHOQOL-BREF quality of life tool increased significantly ($p < .001$) after the program for the 31 participants.
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TEMPLES: A Providers Faith-based Intervention to Increase the Quality of Life of Women with Cardiovascular Disease

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All authors contributed to the study conception and design. Material preparation, literature search, data collection and analysis were performed by Kelli Kelley. The first draft of the manuscript was written by Kelli Kelley and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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Compliance with Ethical Standards

Conflicts of interest-

All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interests in the subject matter or materials discussed in this manuscript.

Research involving human participants and/or animals-

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Informed consent-

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TEMPLES: A Faith-based Intervention to Increase the Quality of Life of Women with Cardiovascular Disease

Abstract

Heart disease is the leading cause of death for Americans. Advanced health care providers located in rural North Carolina implemented a six-session faith-based intervention, called TEMPLES. Evidence-based health-improvement measures, combined with spiritual guidance, promoted both faith and health during six online classes. The four volunteer healthcare professionals who led the TEMPLES implementation were interviewed after the program, and a content analysis revealed their thoughts regarding personal spiritual growth and satisfaction with program implementation. Mean scores on the WHOQOL-BREF quality of life tool increased significantly ($p < .001$) after the program for the 31 participants.

Keywords: Women, Cardiovascular Disease, Faith-Based Health Promotion, Quality of Life, WHOQOL-BREF

Feasibility and Impact of TEMPLES: A Faith-based Intervention to Increase the Quality of Life of Women with Cardiovascular Disease

Do you not know that your bodies are temples of the Holy Spirit, who is in you, whom you have received from God? You are not your own; you were bought at a price. Therefore honor God with your bodies (*New International Version,* 1 Corinthians,6, 19-20).

Cardiovascular disease is the leading cause of death for all Americans (Centers for Disease Control and Prevention [CDC], 2020). One in every four women will die from cardiac-related diseases in their lifetime (CDC, 2020). Women between 45 and 65 who have a heart attack are more likely than men of the same age to die within a year of the heart attack (U.S. Department of Health & Human Services, 2020). Despite a push for increased awareness of cardiovascular risk factors over the past decades, only 56% of women actually recognize that heart disease is their number one killer (CDC, 2020).

Treatment for patients with CVD includes symptom relief, maximization of functioning in everyday life, and helping patients achieve the highest level of quality of life (QOL) possible (Morys et al., 2016). Mold (2017) explains that in-office providers should focus on health-related goals, including prevention of premature death and disability, maximization of personal growth, and improvement of QOL. However, in-office education does not compare to holistic education provided to individuals and families (Story et al., 2017). This may be due to the fact that in-office education does not address loneliness, which is a potential aggravator of CVD risk (Story et al., 2017; Xia & Li, 2018). Among women, a high amount of loneliness is associated with an increased risk of heart disease incidents (Xia & Li, 2018). In addition, increasing age is associated with social isolation and loneliness in certain populations, which can lead to or exacerbate health issues such as high blood pressure, heart disease, obesity, and even death (National Institute on Aging, 2020).

Rural communities have fewer resources than urban communities for preventing and treating chronic diseases such as heart disease (Rural Health Information Hub, 2019). Residents of rural communities also face a higher rate of multiple chronic conditions, which can be difficult and expensive

to treat (Rural Health Information Hub, 2019). Not only are heart disease and stroke more prevalent in rural areas (12.5% of rural populations vs 10.4% in urban populations), but they also have a higher death rate on rural residents (Rural Health Information Hub, 2019). A 2017 Appalachian Regional Commission report described that when in comparison with rural America, the mortality rate is even higher in Appalachia for those with chronic cardiovascular conditions (Marshall et al., 2017).

Review of Literature

Faith-based interventions (FBIs) can play a substantial role in the awareness, prevention, and treatment of diseases by engaging patients' faith, spirituality, and religiosity (Schoenberg, 2017). Faith is defined as placing complete trust or confidence in someone or something (Oxford, 2020). Individuals of the Christian faith practice by trusting God, as well as their healthcare providers, to maintain their health (Hathaway, 2018). Isaac et al. (2017) explains that patients want their physicians to have knowledge of their spiritual beliefs in hopes that this knowledge will facilitate a better understanding of them as individuals. The initiation of faith-based programs, formerly a popular occurrence in health education, is currently considered a non-traditional route for health promotion education (Galiatsatos & Hale, 2016). This fact is unfortunate, because the church is a welcoming and cost-effective setting in which to provide health promotion and chronic disease education (Tettey et al., 2016).

Faith-based programs have earned their reputation as sustainable and desirable methods to improve health and well-being and should be considered in the care of individuals with chronic diseases (Schoenberg, 2017). Cardiovascular disease (CVD) is a chronic disease that has realized promising outcomes utilizing FBIs (Yaghoobzadeh et al., 2018). Higher levels of religion and spirituality may be related to better QOL among patients with CVD, while FBIs improve participants' QOL through management of CVD, and research shows a strong, positive correlation between religion, spirituality, and QOL (Abu et al., 2018). In addition, connecting with others for support can reduce social isolation and loneliness that decrease QOL (National Institute on Aging, 2020).

Several faith-based projects have supported these claims (Tettey et al., 2016; Valtorta et al., 2018; Yaghoobzadeh et al., 2018). "HeartSmarts," a faith-based CVD educational program, used evidence-

based literature and biblical scripture to encourage participants' practice of various important health behaviors, including improving nutrition, accessing health care, and engaging with social services (Tettey et al., 2016). The program successfully used peer educators to reduce CVD health disparities for participants of all races and genders, while promoting a culture of wellness and incorporating scripture (Tettey et al., 2016). Similarly, Walker et al. (2015) showed that a program could focus on the spiritual, mental, and physical dimensions of well-being in combination with a spirituality-based health behavior–change challenge. Participants found the program practical, and their successful attainment of session objectives and completion of homework served as evidence of program success (Walker et al., 2015). Other important aspects of FBIs include addressing participants' loneliness (Valtorta et al., 2018), self-care related to CVD (Riegel et al., 2017), stress management (Levine et al., 2017), and using spiritual beliefs and prayers to help participants feel a sense of control during stressful situations (Bartkowski et al., 2017).

Due to the Covid-19 pandemic of 2020-2021, the vast majority of supportive organizations, including the church, were forced to find new ways to offer accessible help and support to their members. Online support groups and health-education programs have been shown to be effective for many years and in many different settings, and churches have successfully offered video-streaming of services and online prayer and discussion meeting in the recent past (VanderWeele, 2020). In addition to offering ways for their congregants to stay connected and share their faith, communication technology has been shown to help alleviate social isolation (Chen & Schulz, 2016). Online meetings can help reduce loneliness and stress and increase a sense of control (Zamir et al., 2018). One web-based intervention demonstrated a positive association between decreased mental distress and increased well-being by using weekly journaling (Smyth et al., 2018). Frequent journaling can help people organize their thoughts, clear their mind, facilitate problem-solving, and even gain perspective (Tams, 2020).

Religious health care professionals with advanced degrees are educated people with a strong desire to help others (Tettey et al., 2016). Health care personnel within congregations who provide evidence-based information to peers with CVD to improve QOL are considered medical missionaries in

the local community (DeHaven et al., 2004). The use of scripture brings value to participants' experience in FBIs and can improve program success (Tettey et al., 2016). Indeed, spirituality-based health promotion programs benefit participants' health behaviors by helping them focus on the spiritual and mental dimensions of well-being, in combination with physical actions such as diet modifications and stress reduction (Walker et al., 2015). FBIs are advantageous because they meet the needs of patients and families while being cost-effective and beneficial for risk reduction (Walker et al., 2015; White et al., 2016).

Purpose of the Project

Health care workers with advanced degrees who were also members of churches in rural North Carolina found that women with CVD had inadequate resources to help improve their overall health. When reaching out to other surrounding churches regarding CVD support programs. Members of additional congregations in the area agreed that there was a significant need for such support and that they were also seeking ways to improve the overall health of the women in their church.

To address that need, TEMPLES (Total Empowerment through our Maker to Produce Love Energy and Strength), a faith-based quality improvement (QI) program, was designed. It is meant to be implemented by health care professionals (called "religious mentors") within religious organizations with the aim of improving health outcomes and QOL of women over the age of 45 previously diagnosed with CVD and/or CVD risk factors.

The program consists of six weekly online classes covering evidence-based education on healthy nutrition, stress management, social isolation, establishing a sense of control, spiritual wellbeing, and building a spiritual relationship with a healthcare provider, along with weekly journaling assignments. Due to the Covid-19 pandemic, the entire program was redesigned to take place online.

TEMPLES aimed to modify traditional health promotion to help churchgoing females who suffer from CVD so they practice current, evidence-based best practices that promote spiritual growth while increasing their QOL. The primary outcome measure was religious mentors' perspectives on program

feasibility and overall satisfaction with the program. A separate outcome measure included participants' QOL after attending the 6-week online program

Methods

Design

This was a 6-week prospective QI project implementing the TEMPLES program via an online virtual program. The TEMPLES project and its evaluation were approved by the Institutional Review Board leading the project.

Participants and Recruitment

This QI project utilized a sample of four health care providers titled religious mentors for the purpose of describing their duties (see Table 1 for religious mentor's demographics). Eligibility requirements for religious mentors included that they have an advanced degree (a bachelor's degree or higher) in a health care related field. Religious mentors also had to have access to the Internet and the free virtual program, have the ability to download and share the provided PowerPoints, and speak English. There was no financial compensation for participating in the TEMPLES program.

Religious mentors and the project coordinator then enlisted program participants nationwide via convenience sampling using word of mouth, printed pamphlets, and social media. Interested parties were e-mailed the program's inclusion criteria (female, CVD risk factor and or CVD diagnosed, over age 45, access to the Internet, and English speaking) and a schedule of available online classes. Participants then chose which class to attend based on their time preference. Participants who agreed to attend TEMPLES classes offered their verbal consent when signing up. There was no financial compensation for participation in the program.

Project Implementation

Mentor Training

Religious mentors participated in two online, one-on-one meetings with the project coordinator to discuss the purpose and goals of TEMPLES and to prepare for program implementation. Religious mentors recruited participants from their congregations, place of work, word of mouth, and social media.

PowerPoint slides created by the project coordinator were sent to the religious mentors via email. The mentors then determined a TEMPLES online meeting schedule that best fit participants' and mentors' schedules.

Program Curriculum and Delivery

The TEMPLES curriculum content is grounded in evidence-based health and wellness education centered around different biblical themes (see Table 2 for curriculum content). The class structure for each of the 40-minute online classes was: five minutes of welcome greeting, five minutes of prayer/ meditation, five minutes of scripture reading, a five -minute lesson guided by a PowerPoint presentation, a five-minute group activity or interaction, a five-minute explanation and time for questions, five minutes of closing prayer/prayer requests, and five minutes in which the mentor explained participants' homework assignment.

Topics of the six classes were as follows: healthy nutrition, stress management, social isolation, establishing a sense of control, spiritual wellbeing, and establishing a patient-provider relationship. The religious mentors presented the provided PowerPoint slides to TEMPLES participants using a virtual program, and discussions followed each presentation.

Measures

Mentors' Feedback on Program Feasibility and Satisfaction

After the conclusion of TEMPLES, the four religious mentors were interviewed by the project coordinator to gather feedback about the program and determine how well they felt the program met the participants' needs. Each individual interview consisted of five questions:

1. How satisfied are you with the curriculum TEMPLES provided?
2. Share your thoughts about the usefulness of the TEMPLES program.
3. Provide any recommendations for further use of the TEMPLES program.
4. Share how the mentoring experience affected your relationship with God.
5. Share how TEMPLES has changed your spiritual relationship with others.

Participants' Quality of Life

Participants completed the World Health Organization's Spirituality, Religiousness, and Personal Beliefs brief instrument (WHOQOL BREF) tool prior to the first class and once again after the last class was completed. The WHO developed the tool to facilitate cross-cultural assessment of spiritual QOL among religious persons (Hammer et al., 2019). Quality of Life is measured according to answers to questions about a person's physical health, psychological health, social relationships, and environment. The tool includes 26 questions. Each item is scored on a Likert-type scale (1 = *very dissatisfied*, 5 = *very satisfied*). For example, one question regarding psychological health is "How satisfied are you with your health?" The total possible score for the WHOQOL BREF tool is 100, with higher scores denoting better QOL. Scores on the tool are determined by adding the unweighted responses of each question. The QOL factor on this measurement tool has been robustly associated with well-being and demonstrated important strengths and limitations for the assessment of spiritual QOL across diverse populations (Hammer et al., 2019). Cronbach's alpha coefficient for the whole WHOQOL-BREF scale is 0.896, proving satisfactory psychometric properties that facilitate estimation of QOL (Ilic et al., 2019). This tool was chosen due to its reliability and validity for the assessment of QOL in the general population (Balalla et al., 2019; Hammer, 2019).

Data Collection

The project coordinator sent an anonymous SurveyMonkey survey to participants via email prior to the start of the first online class in the 6-week program. Their responses established a baseline QOL score. After completing the 6-week program, participants completed a second WHOQOL BREF for comparison of QOL scores. In addition, the four religious mentors were individually interviewed to ascertain their feedback about the feasibility of and satisfaction with the program.

Data Analysis

Religious Mentors: Qualitative Content Analysis

Each mentor was interviewed individually, their interview recorded, and a transcript was made from each recording. Content analysis of the transcripts was used to determine themes related to the

healthcare providers' thoughts about the effectiveness of and satisfaction with TEMPLES. Conventional content analysis was used for this qualitative analysis because we were interested in capturing emerging themes from the religious mentors' interview responses (Erlingsson & Brysiewicz, 2017).

Participants: Quantitative Quality of Life

Data was collected and entered into Intellectus Statistics™. A two-tailed paired-samples *t* test was conducted to examine whether participants' mean score on the WHOQOL BREF prior to the program was significantly different from their mean score on the tool after the program ended.

Results

Religious Mentors Feedback about the Program

The four themes that emerged from mentors' interviews were: usefulness of the TEMPLES program in terms of real-life applications (e.g., promoting healthy lifestyles and mental health), the impact of the program on strengthening relationships with God and others, openness to sharing religious beliefs with others, and a desire to increase the reach of the program.

The religious mentors stressed how useful the program was for the participants. They cited an individualized approach towards communicating with participants about their healthcare needs as a positive feature of the program. One mentor explained,

> In the clinic, we are hard-pressed to come up with a "one size fits all" [healthy lifestyle] option and I do not always have the time necessary to dive into those specific patient needs. A program like this gives that avenue.

When asked how the program influenced their relationship with God, all of the religious mentors reported that the mentoring experience positively affected their relationship with God. An exemplar response was, "I[t] made me devote more much needed time to God. TEMPLES strengthened my relationship with God, which was much needed for me as I have been out of in-church worship for some time now."

In addition, all religious mentors noticed that their spiritual relationships with others improved. They felt inspired to be more involved with the church, to use God's gift (health education) to help others, express empathy, and feel an openness to share their beliefs. One mentor stated,

> I do not share my faith as well as I should outside of my church family. As the weeks went by, I felt more comfortable sharing my testimony and beliefs in that aspect. This program helped me realize that I need to talk about God's word more, especially to Christian patients.

Finally, religious mentors' feedback on how to improve the TEMPLES program was analyzed. The main feedback was related to increasing the reach of the program. One respondent said, "Consider using a webinar so that more people could access the information," while another recommended "... It would be great to grab a wider audience while maintaining a small group. My recommendation is to continue this work and make TEMPLES accessible to healthcare workers worldwide." They also discussed the importance of having in-person meetings with small groups, which was not possible due to Covid-19. Making the program longer and encouraging long-term interaction between participants and religious mentors were also recommended.

Quality of Life for TEMPLES Participants

Thirty one participants volunteered for the 6-week program. See Table 3 for demographics.

Assumptions

A Shapiro-Wilk test was conducted to determine whether the data were normally distributed (Razali & Wah, 2011). The assumption of normality was met, with an alpha value of .05, $W = 0.94$, $p = .107$.

Quality of Life

A two-tailed, paired-samples *t* test with an alpha of .05, was used to determine changes in participants' QOL. Participants' mean QOL after the TEMPLES program (M = 78.75, SD = 18.34) was significantly higher than the mean of their pre-program QOL (M = 67.52, SD = 18.70) $t(30) = -17.60$, $p < .001$. The effect size was large, with a Cohen's *d* of 3.16.

Discussion

The TEMPLES program was well received by the four religious mentors, who demonstrated their satisfaction with the implementation. In addition, participants' scores on the QOL tool increased significantly after participating in the program. Both results demonstrate that TEMPLES is a feasible faith-based wellness program for health care providers to help improve QOL of Christian women with previously diagnosed CVD.

These results support previous studies showing that faith-based ministries play an important role in improving life overall (Clark, 2015). When people with CVD feed their religious beliefs and spirituality, their QOL is enhanced (Abu et al., 2018). Similar to our results, Tetty et al. (2016) showed that integrating scripture into cardiovascular disease health messages is both an acceptable and feasible approach to health promotion (Tetty et al., 2016). Another faith-based program which focused on the Spiritual Framework of Coping and social isolation explained that its high ongoing participation rate justified it's successfulness (Walker et al., 2015). 68% of TEMPLES participants attended four or more class sessions.

The TEMPLES program showed that it was feasible to engage health care providers as religious mentors to deliver such a curriculum to female participants, even online. This tactic was both fulfilling and rewarding to all involved. Many religious mentors explained how they were able to take their education and use it to deliver God's message. In addition to their positive QOL gains, participants anecdotally shared that the program helped them deal with common daily struggles, especially during the COVID pandemic when feeling isolated is so common. Participants also explained that they learned more about God's word while maximizing their personal health. Being closer to God was a frequent theme mentioned by religious mentors as well as participants.

While the WHOQOL tool did have items measuring social isolation, it was not parsed out and measured separately. This measurement would be encouraged in additional programs. A lesson learned was the religious mentor needed to be actively seeking the opportunity to serve in this capacity. Having buy-in from the health care professional is crucial to the program success (French-Bravo & Crow, 2015).

Religious mentors and participants may be busy from time to time, but the curriculum was developed to have a flexible and changeable schedule. Religious mentors had ownership of the program and were told to implement it at times most convenient for themselves while considering their participant's needs.

Limitations

Regardless of the acceptability and feasibility of the program, limitations were inevitable. One limitation is that religious mentors and participants were a self-selected group. Another limitation was the small sample size for both religious mentors and participants. It is difficult to generalize our results due to low power. In addition, all data were collected via self-report measures, which may not offer as robust validity as other forms of data collection due to the propensity of participants to offer socially desirable responses. Lastly, it is important to note that the TEMPLES program was originally intended to be presented in churches utilizing small groups but had to be moved to an online program due to COVID-19. TEMPLES participants anecdotally mentioned that they would have preferred that the sessions take place in person because they would have been more involved in talking out loud and sharing personal experiences.

Conclusions

This program focused exclusively on women over the age of 45 and the Christian faith. Moving forward, it would be beneficial to include a program for men and women of all adult ages. As the correlations of faith, spirituality, health, and QOL is not partial to Christianity, it would also be appropriate to plan curricula for delivery to members of other religions. This project focused on CVD and its risk factors, but it could easily be adjusted to meet the needs of participants needing assistance as they negotiate any chronic-disease process. Because the religious mentors hoped to continue this program and make it accessible to health care providers worldwide, the project coordinator has completed a website www.shairecenter.wixsite.com/temples to provide free access to the TEMPLES program.

With many reports of the COVID-19 pandemic creating specific negative impacts such as decreased mental health and well-being, social isolation, and worsening chronic conditions (Panchal et al., 2021; Valtora et al., 2018) faith-based programs such as TEMPLES will increase QOL while reducing

health disparities. Programs such as TEMPLES may further improve a culture of wellness that encourages awareness and health behavior changes within the population of female Christians. This method can easily be tailored to other health issues and religions or altered to relate to other communities.

Declarations

Funding-The authors did not receive support from any organization for the submitted work. No financial compensation was offered to any persons involved.

Conflicts of interest- All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interests in the subject matter or materials discussed in this manuscript.

Availability of data and material- Yes

Code availability-Not applicable

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Ethics-Approval for IRB was granted. This is an observational study. The University Research Ethics Committee has confirmed that no ethical approval is required. Informed consent was obtained from all individual participants included in the study.

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Table 1

Demographics of Religious Mentors Leading the TEMPLES Program

Participant	Gender	Race	Profession
1	Female	Caucasian	Occupational Therapist
2	Male	Caucasian	Family Nurse Practitioner (MSN)
3	Female	Caucasian	Board Certified Chiropractor
4	Female	African American	Medical Physician

Table 2

TEMPLES Program Curriculum for Women with Cardiovascular Disease

Week	Topic	Scripture	Lesson	Discussion	Homework
1	Healthy Nutrition	Daniel 1	Your body is a gift from God. Daniel's faith ensured a healthy outcome.	How to serve God by taking care of your body. Healthy eating options.	3 journal entries regarding what you are grateful for, concerns you have, solutions, and accomplishments. Make 3 improvements in your regular diet this week.
2	Stress Management	Luke 11	Finding peace. Understanding the difference between stress and anxiety.	Decrease stress by using prayer, exercise, meditation, deep breathing, reflexology, and journaling.	3 journal entries regarding what you are grateful for, concerns you have, solutions, and accomplishments. Download a meditation app on a smart device for use 3 times a week during the program.
3	Social Isolation	Ruth 1: 1-18	Loyalty and commitment make relationships lasting. Increasing your sense of belonging boosts happiness and reduces stress.	What makes a friend? Create a wanted ad for a make-believe friend. How to prevent social isolation safely during COVID-19 times.	3 journal entries regarding what you are grateful for, concerns you have, solutions, and accomplishments. Meet with two friends using safe social distancing.
4	Establishing a Sense of Control	2 Chronicles 20	God will follow through if you keep your faith strong.	Should we admit when we are weak?	3 journal entries regarding issues that cause anxiety.

			Strategies to resolve conflicts.	How can we understand what we should pray for?	Pray for guidance regarding a current conflict.
5	Spiritual Well-being	James 5:16	The 5 spiritual stages of Christianity.	Determining your current stage. What is hindering your current growth?	3 journal entries regarding your personal spiritual wellness.
6	Developing a Spiritual Patient-Provider Relationship	Matthew 9	Why it is important for your provider to know your beliefs.	How to partner with your provider so that they understand. Role playing. Advance directives (5 wishes).	3 journal entries regarding what you are grateful for, concerns you have, solutions, and accomplishments.

Table 3

TEMPLES Participant Demographics (N = 31)

Item	Response	*n*	%
Location	North Carolina	28	
	Mississippi	1	
	Pennsylvania	1	
	Alaska	1	
Race	Black	12	38
	White	18	58
	Other	1	3
Age	45-54	14	46
	55-64	6	20
	65+	10	33
Education	Graduate school	13	42
	Some college	14	45
	High school graduate	4	13
Marital status	Single	9	30
	Widowed	2	7
	Married	19	60
	Divorced	1	3
Self-reported	Obesity	6	20
health conditions	Hypertension	11	35
	Thyroid dysfunction	8	26
	Diabetes	14	23

	Other diseases mentioned includes kidney disease, poor circulation, anxiety, fatty liver, asthma, and rheumatoid arthritis

Note: All participants were female.