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Nurses Chronic Pain, a Brief Survey Report

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A B S T R A C T

Background: Chronic pain (CP) is a complex disease affecting over 20% of adults in the United States (US). Nurses have physically demanding jobs and can and do experience CP; however, there are few studies on interventions to manage nurses' CP.
Aim: This study aims to describe the impact of CP on nurses' personal lives and professional duties, what support they requested, and explore their interest in using brief meditation-based strategies to help manage their pain journey.
Design: Exploratory, cross-sectional survey. Twenty-seven questions were multiple choice, with thematic analysis conducted on 6 optional open-ended questions.
Methods: An online survey was based on Equator Network's Checklist for Reporting Results of Internet E-Surveys (CHERRIES) guidelines. An invitational link was distributed to local nurses using Facebook, Twitter, and email for snowball sampling. We recruited a total of ($n = 423$), and ($n = 294$) completed the survey between July and October 2020. Research Electronic Data Capture (REDCap) reported the data as frequencies and percentages. Regression analysis through Statistical Package for the Social Sciences (SPSS) 26 was conducted to find the impact of variables on CP intensity. Narrative analysis was conducted on all written responses.
Results: Participants reported that CP significantly impacted nurses' personal life and professional duties ($p < .001$). The majority (70%) expressed interest in meditation-based interventions. Most (55%) intend to continue working while experiencing CP daily or constant (69%). Nurses reported feeling "stressed," "powerless," "unsupported," and "seeking support."
Conclusion: Nurses continue to work with CP but seek support from employers. Requested health modalities could save an average size hospital $40,300 annually for each full-time clinical nurse retained.

Healthy Nurse, Healthy Nation™ initiative emphasizes safety and quality of life (ANA, 2018). During the COVID-19 pandemic, inconsistent protocols, inadequate staffing, and lack of protective equipment, inadequate staffing heightened radiology nurses' stress (Ayyala et al., 2020; Chen et al., 2021) and potentially increased the injury rate. Although radiology nurses are highly skilled in their knowledge, they often work independently to administer moderate sedation care for patients in all departments (Blevins, 1994; Werthman et al., 2020). They work to take of their patients even during the pandemic, exposing them to infections and injuries (Shamshiri et al., 2022; Working without support could lead to musculoskeletal injuries, including lower back pain injuries, which are significantly higher in all nurses compared to other occupations and are related to lifting patients, falls, and repeated stress injuries that can cause chronic pain (CP; bls.gov, 2018; Samaei et al., 2017). According to the United States (US) Department of Labor Bureau of Labor Statistics (BLS), days off due to injury or illness among registered nurses (RN) jumped to 290% from 2019 to 2020 (bls.gov, 2021). Pain is a warning sign that an injury has occurred, or a medical condition exists (Timmers et al., 2019). The International Association for the Study of Pain (IASP) states that recurrent pain

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that lasts longer than 3 months and interferes with daily activities is defined as CP (Scholz et al., 2019; Treede et al., 2019). The physiological effects of CP are similar to that of chronic stress (Abdallah & Geha, 2017; Chen et al., 2021; Timmers et al., 2019). Although there is literature on preventing injuries and pain in other professions, there are insufficient quality interventions for protecting nurses from pain and musculoskeletal injuries (Richardson et al., 2018). Currently, only 1 study presents the effectiveness of a meditation-based intervention to reduce nurses' CP; however, they do not address intervention to prevent the onset of CP or present nurses' perspectives on their CP experiences (Lopes et al., 2019). Additionally, in meta-analyses on burnout risk factors among nurses, CP is not addressed (Cheng & Cheng, 2019; Galanis et al., 2021; HaGani et al., 2022; Özkan, 2022; Pradas-Hernánde et al., 2018).

Aims

The primary aim of this literature was to present data on how CP affected nurses' personal and professional lives and to present information on what support they requested. The secondary aim was to provide direct and narrative reports from nurses to provide a unique insight into their experiences that are otherwise unavailable in current literature (Briege et al., 2016; Sandelowski, 1994). The tertiary aim was to inform education, practice, policy, and research to prevent CP in the nursing population (Briege et al., 2016; Wang & Geale, 2015).

Methods

Design

The design was an exploratory, cross-sectional survey. This exploratory survey was based on Equator Network's Checklist for Reporting Results of Internet E-Surveys (CHERRIES) guidelines (Eysenbach, 2012). The Health Insurance Portability and Accountability Act (HIPPA) compliant Research Electronic Data Capture (REDCap) was used to house the survey. The recruitment was conducted through social media sites, including Facebook nursing support groups which provided easy access for convenience sampling from the target-rich population in a Midwest city (Jones, 2017; Whitaker et al., 2017). A mixed methods approach was used with the intent of collecting data on the complexity of the issue (Creswell & Plano Clark, 2018), as there is scant literature on this subject. This study, with 27 multiple-choice questions and 6 optional open-ended questions, provided participants with complete anonymity, encouraging direct participation (Fink, 2015). A regression analysis was conducted using Statistical Package for the Social Sciences (SPSS) Version 26 to find the impact of study variables on CP. All optional written responses were read and reread. A narrative analysis of self-reports allowed themes to emerge between participants reporting on a similar experience (Riesman, 2008).

Participants

Inclusion criteria for study participants included (a) being older than 18 years of age, (b) reporting pain lasting more than 3 months, or (c) having worked or currently working in a role requiring a nursing license. Exclusion criteria included (a) participating in any regular formal meditation practice within the last 3 months, (b) being pregnant, (c) actively using steroids, or (d) being diagnosed with Cushing's disease as these conditions impact the level of cortisol which in turn affect the perception of pain (Granger & Taylor, 2022).Using G*Power 3.1 to conduct a power analysis, a minimum sample size of 89 was determined to be needed to achieve a .05 level of significance and a power of 80% (Verma & Verma, 2020).

Measures

The survey questions were constructed after an extensive literature review on the effects of chronic pain on nurses. The survey was developed, tested, and approved by a panel of 13 experts, including physicians and nurses specialized in CP management, human resources, and internet technology (Jones, 2017). This iterative process allowed for continual review and improvement, yielding straightforward questions (Jones et al., 2013). The survey was created to capture data questions: (a) nursing registration; (b) duties; (c) years of service; (d) source of CP; (e) duration and intensity of CP; (f) use of pain medications; (g) interest in complementary therapy; (h) barriers to self-care; and (j) support requested to manage CP. REDCap assigned numerical values to the variables. The numeric scale assessed the average pain intensity over the last 3 months (Suzuki et al., 2020).

Procedure

After approval from the institutional review board (IRB), an invitation link to the survey was posted on various local nursing-related social media sites (Hartemo et al., 2016; Jones, 2017). We encouraged the snowball recruiting method, where nurses could forward the survey link to their colleagues who met the inclusion criteria (Chambers et al., 2020; Kosinski et al., 2015). This snowball method resulted in the recruited sample from 9 countries and 48 states. The investigators had no direct contact with the participants. Any nurse meeting inclusion and willing to participate could click on the link, read detailed information about the study, and provide informed consent. There were no time restrictions to complete the survey. Qualtrics completeness check indicated that the completion time to take the survey was less than a minute. Participants were requested to take the survey only once to preserve the data's integrity. All participants could review and amend their answers using a review button before submission (Eysenbach, 2012). No gifts were offered; the only incentive for participating was that this article would present data and personal stories to future researchers in creating evidence-based pain management modalities to help nursing professionals experiencing CP (Fink, 2015).

Data Analysis

Survey responses were captured in REDCap. Demographic data were presented as descriptive statistics by REDCap. A regression analysis was conducted using Statistical Package for the Social Sciences (SPSS) Version 26 (IBM) to find the impact of study variables on CP intensity. A narrative analysis that provided poignant stories was conducted on all written responses (Reissman, 2005).

Results

The survey was open for 13 weeks, from July 22, 2020 to October 21, 2020. This snowball method resulted in a sample from 9 countries and 48 states in the United States (US). REDCap captured 423 nurses who accepted the invitation, 419 who consented to participate, and 294 who completed the survey (Appendix A). With a sample of $n = 294$ with females (267, 90.8%), and males (27, 9.2%), this survey provided a power of .999 (O'Connor, 2017; Verma & Verma, 2020).

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Main Findings

The dependent variable of CP was found to be normally distributed. Multiple linear regressions were then conducted; the first was to see if the dependent variable of pain intensity was predicted by age and work in direct patient care. The R-square for the model was $R^2 = 0.046$ (Table 2). This represents the proportion of variance for the dependent variable, explained by the independent variables (Sujarweni & Utami, 2019). This means that the regression model explains 4.6% of the variation in CP. This regression model was statistically significant, $F(2, 284) = 4.57$, $p = .004$. Age was a significant predictor of CP (t [286] = 2.29, $p = .023$). This means that the nurses' age did not affect the CP outcomes; some older nurses reported less CP, while some younger nurses reported more CP. The interaction between age and direct patient care was not a significant predictor of CP t (286) = −1.238, $p = .217$. This means that the regression model did could not find an interaction between nurses' age and their area of practice significant for CP outcomes. More regressions were run with CP levels as the independent variable and other scale-based items as the dependent variables. Chronic pain levels were a significant predictor of CP affecting professional duties ($p < .001$) and CP affecting personal life and well-being ($p < .001$). These results indicated that the level of CP levels was a significant predictor in affecting professional duties and personal life and well-being. Chronic pain levels were not a significant predictor of practicing daily self-care ($p = .727$). This result indicates that self-care helped reduce CP. Chronic pain levels were a significant predictor of willingness to try mindfulness-based interventions ($p = .012$). This indicates that nurses who experienced CP were willing to try mindfulness-based interventions. And CP levels were a significant predictor in nurses considering leaving or having left the profession of nursing due to CP ($p < .001$) (Table 1).

Additional Findings

Nurses reported a lack of time (76%), lack of money (34%), lack of knowledge (11.%), lack of motivation (41%), and fear of pain (31%) as barriers to practicing regular self-care. Since 90% reported that their CP directly resulted from a workplace injury, 52% of participants requested understanding from supervisors about their CP. Of the 49% of nurses who reported that their work contributed to their CP, 90% were in the musculoskeletal system. Some requested workplace accommodations such as patient lifts, comfortable chairs, shoes, and sit-to-stand desks (71%). Over half (57%) requested job share, fewer hours, and regular breaks; 58% requested a dedicated place to practice self-care at work, such as walking, praying, meditating, yoga, and relaxing (Table 4). Since 85% experienced fear of pain more than some of the time, 39% requested assistance from a psychologist, physical therapist, nutritionist, or another professional who works in a hospital setting to support their CP management. Seventy percent of nurses agreed to try complementary therapies, such as mindfulness-based interventions, which have shown efficacy in reducing chronic pain and stress (Valluri & Gorton, 2022). Seven percent reported they had left nursing, 39% stated they intended to leave the profession, yet 55% said they would continue to work despite 69% experiencing CP daily or constantly.

The narrative analysis allowed thematic content analysis to emerge between participants reporting on a similar experience (Riesman, 2005). Narrative responses revealed experiences of 5 themes (Riesman, 2005). Participants reported feeling "powerlessness" due to the limiting effects of pain on their personal and professional lives. They reported being in a constant state of "stress." Participants reported feeling "unsupported" in the workplace, despite their "love" for their patients, but are "seeking support" from employers to help perform their job to the best of their

Table 1
Results of survey of nurses' chronic pain

Variables	Finding percentages
Countries	Australia 1%, Fiji .3%, Ireland .3%, India 6%, Japan .3%, Malawi .3%, Macedonia .3%, United Kingdom, .7%, United States 90%.
Registration	Advanced Practice Registered Nurse (9%), Licensed Practical Nurse (9%), Registered Nurse (77%)
Education	Some college (6%), Associate degree (17%), Bachelor's degree (43), Master's degree (24%), Doctor of Nursing Practice (1%), PhD (4%), Nursing student (2.0%)
Employment	Employed full time (66%), Employed part-time (15%), Furloughed due to COVID (1%), Unemployed looking for work (4%).
Years of nursing	less than 5 years (17%), 6 to 10 years (22%), 11 to 15 years (13%), 16 to 20 years (11%), 21 to 25 years (9%, 25 to 30 years (10%), 30 to 34 years (5%), 35 to 39 years (6%), Over 40 years (8%).
Type of nursing	Direct patient care (78%), Indirect patient care (16%), Education (30%), Volunteer (4%), Nursing professional development (8%).
Experience of chronic pain	3 months to 5 years (50%), 6 to 10 years (24%), 11 to 15 years (11.6%), 16 to 20 years (8%, 21 to 25 years (3%), 25 to 30 years (3%), Over 30 years (2%).
Average pain (0 to 10)	(2%), (3%); (9%), (3%), (21%), 5 (17%), (13%), (10%), (4%), (0.7%), (0.7%).
Cause of chronic pain	Genetics (30%), Accident (22%), Domestic violence or Abuse (1%), Previous or current nursing duties (49%), Surgical intervention (14%), Other (37%).
Location of chronic pain	Musculoskeletal (90%), Abdominal pain (14%), Psychogenic pain (psychological pain) (10%), Central pain syndrome (11%), Trigeminal pain (facial pain) (4%), postmastectomy (1%), None of the above (4%).
Frequency of chronic pain	Constantly (22%), Daily (47%), 4-6 times a week (13%), 2-3 times a week (11%), Once a week (4%), Monthly (4%).
Prescription pain medication	Daily (24%), 4-6 times a week (2%), 2-3 times a week (2%), Once a week (1%), PRN/As needed (26%), Never (44%).
Over the counter pain medication	Daily (23%), 4-6 times a week (7%), 2-3 times a week (13%), Once a week (2%), PRN As needed (47%), Never (9%).
Try meditation therapy to help with chronic pain journey	Yes (45%), Probably (25%), Might or might not (17%), Probably not (11%).
Chronic pain affects professional duties	Strongly agree (21%), Agree (23%), Somewhat agree (25%), Neither agree nor disagree (10%), Somewhat disagree (6%), Disagree (9%), Strongly disagree (5%).
Chronic pain affects personal life	Strongly agree (38%), Agree (26%), Somewhat agree (22%), Neither agree nor disagree (3%), Somewhat disagree (4%), Disagree (4%), Strongly disagree (2%).
Chronic pain affects profession	Left the profession of nursing (6%), Considered leaving (39%), Do not consider leaving (54%).
Support to manage chronic pain	Employer's support (52%), Ergonomic accommodations (71%). Workplace accommodations (56%), Quiet Self-care (58%), Management Support (45%), Professional support for pain (39%).
Pain affects daily activities	Always (6%), Most of the time (20%), Half the time (23%), Sometimes (36%), Never (15%).
Practice self-care for chronic pain	Never (11%), Once a week (23%), 2-3 times a week (27%), 4-6 times a week (15%), Daily (24%).
Barriers to self-care for chronic pain	Lack of time (75%), Lack of money (34%), Lack of knowledge (11%), Lack of motivation (41%), Fear of pain (31%).

Thirteen-week Survey results of nurses with self-reports of chronic pain starting at July 22, 2020.

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Table 2
Regression statistics of chronic pain among nurses

DV	IV(s)	R^2	B	SE B	B	Anova	Sig. Level
Affects personal life/well-being	Chronic pain	0.213	−.366	.042	−.462	F = 77.76	p < .001*
Willing to try MBIs	Chronic pain	0.148	−.087	.034	−.148	F = 6.43	p = .012*
Affects professional duties	Chronic pain	0.135	−.344	.051	−.368	F = 45.09	p < .001*
Considering leaving nursing	Chronic pain	0.070	−.087	.019	−.265	F = 21.67	p < .001*
Chronic pain	Age	0.046	.222	.097	.299	F = 4.57	p = .004
	Direct care	0.046	1.659	.754	.360	F = 4.57	p = .004
Practicing daily self-care	Chronic pain	0.000	−.014	.041	−.021	F = .215	p = .727**

n = 294. Results are listed in order of the amount of variance explained. We ran 5 models where we entered chronic pain as the independent variable to predict the dependent variables of nurses' professional duties, personal life/well-being, willingness to try meditation-based interventions (MBIs), considering leaving nursing, and practicing daily self-care. In the 6th model, we entered direct age and patient care as predictors of chronic pain.

* $p < .05$.

** $p > .05$.

abilities. A few quotes highlighting the findings and requested help from nurses are presented (Table 3).

Discussion

Currently, no literature presents data on how CP affects nurses' personal and professional lives in the US. The snowball method was successful and resulted in nurses being recruited from 9 countries and 48 US states. This sample reported that CP significantly impacted nurses' professional lives with higher pain levels, and the more professional duties, the more personal lives and well-being were affected. The only item that CP levels were not a significant predictor was practicing daily self-care. This suggests that self-care elevates nurses' well-being (Williams et al., 2015). However, if nurses work 40 hours or more per week, they do not have a work-life balance, and lack of time and energy are barriers to engaging in physical activity or cooking healthy meals (Williams, Fruh, Barinas, & Graves, 2022). This survey of chronic pain study collected data on the multiple variables impacted by CP, affecting nurses' personal and professional lives due to the complex nature of the disease and where most people experience pain in silence (Gillsjö et al., 2020). In similar studies, chronic pain in nurses is the prevalence of chronic pain in Brazil is estimated to be 43% to 93% (Lopes et al., 2019). In comparison, 639 registered nurses in Iran, Shiraz University of Medical reported the prevalence of CP was reported to be 64.8% (Kheiry et al., 2019). Both of these percentages are higher than reported in this survey.

As this survey was disseminated at a time when the participants were experiencing unprecedented COVID-19—related stress and CP, there was heightened patient acuity and increased workload (Specht et al.,2021). Perhaps because of this strain, most were willing to participate in mindfulness-based complementary therapies to help manage stress and CP. Experiencing such constant stress can heighten pain, hinders cognitive abilities, reduces job productivity, decreases morale, and dampen one's most profound expression of self in their work (Bushnell et al., 2015; Dik et al., 2015; Sarafis et al., 2016). One participant stated, "*pain affects everything I do, not just my professional duties*." Chronic musculoskeletal pain and mental health can reduce productivity, can result in depression, and increases medication errors; patient falls, and low scores in quality of care (Letvak et al., 2012). Another participant, younger than 38 years old, emphasized, "*I'm unhappy not being able to provide direct patient care, which was the reason I became a nurse. It has caused depression and dissatisfaction in my personal life*." Although the CDC reports that older adults have a higher prevalence of CP (Dahlhamer et al., 2018), in this study, the age of the participants was not age was not statistically significant in predicting CP. This data is in keeping with the statistics that 25% of the nursing workforce are younger than 38 years, with 78.1% providing direct bedside care (Blubaugh & Reed, 2019; Missouri Board of Nursing, 2020).

Cost of Retention

According to the U.S. Bureau of Labor Statistics (BLS), and the Department of Labor's Occupational Safety and Health Administration (OSHA), 61% of nurses work in hospital settings providing direct bedside care (Bls.gov, 2018; OSHA, 2019). The nurses who provide direct bedside care report the most significant injury rates among other professions, causing 20% to leave their jobs to avoid the additional work-related risk of injury (OSHA, 2019). In 2020, as a result of the pandemic, days from work due to illness or injury jumped among registered nurses increased by 290.8% (bls.gov, 2021). Even if a few of these nurses leave, it will increase the financial costs of health care and the shortage of nursing staff worldwide (Haddad et al., 2020; World Health Organization, 2020).

An average US hospital spends approximately $48,050 to fill 1 nurse vacancy, with annual costs of replacing nurse vacancies can

Table 3
Effects of chronic pain on nurses' professional and personal lives

Nurse response Survey number	Effects of chronic pain on professional duties and personal lives
#59	(Powerlessness) On days that my pain is constant, I probably didn't sleep good, and feel as I am just at work and don't connect with my patients as much as I'd like to. I feel that my pain distracts me or is so bothersome to the point where it preoccupies me from critical thinking.
#125	I can't hold my children for prolonged periods of time. After a few minutes of holding them the pain intensity increases and I need to set them down. It's hard for a 3-year-old and 1-year-old to understand why mommy can't hold them.
#408	It (chronic pain) has made my world very small.
#374	(Stressed) Stress at work even worse and this all adds to the whole picture—none of the nurses feel valued
#322	(Seeking support) I have a difficult time getting to the doctor because of work. It would be great if the same doctors that see my residents could see me too and if I could do PT while at work (even if that meant I would stay an extra time to finish my 40 hours a week).
#345	(Love) During COVID, there are not enough beds, let alone lifts, to help us. But I don't mind because I love my work. This is who I am.

Selected direct responses from participants in the survey to highlight the impact of chronic pain on nurses' personal and professional lives and their willingness to participate in meditation-based interventions.

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Table 4
Recommendations by nurses

Recommendations	%	Participants survey number (NR)
Ergonomic health care and office equipment	71%	"Availability/acceptability to use Hoyer lifts and assist devices" NR # 236
Place and time for self-care place to walk, pray, meditate, practice yoga, and relax	58%	Quiet room for meditation or relaxation... Support groups to learn from each other. NR # 149
Regular breaks, regular shifts, job share	57%	Task checklists prevent nurses from basic self-care such as essential breaks. NR # 403
Requested support from employers and peers	51%	"The biggest support is empathy and understanding" NR # 20
Help from multidisciplinary team at work to help with pain management	39%	Provide therapy, including physical, massage/chiropractic, mental health therapy to their employers for free. "Otherwise, many will not be able to keep up with the physical demands of their bedside job for very long." NR # 75

Recommendations to manage pain management. % = percentages. Nurses Response Survey Number NR was numbered in the sequence of survey participation.

range from $4.4 million to $6.9 million (Jun et al., 2021). These costs include recruitment, advertisements, interviews, background checks, new staff training, and orientation (Lockhart, 2020). For considerably less than the cost of replacing a single nurse, employers could potentially help in saving $270,800 to $306,400 for every 1% in nurse retention (Colosi, 2021; Kress et al., 2015). However, the intangible loss of nursing talents and nursing experiences is immeasurable.

Support for Pain Management

A retention strategy is to empower nurses to have a voice in influencing their healthy work environment (Shimp, 2017). To help influence such an environment, participants of this survey requested understanding, support, ergonomic equipment, and a place for self-care. The ease of accessing ergonomic equipment that how shown to significantly reduces musculoskeletal injuries (Mohammad et al., 2019). A Family Nurse Practitioner (FNP) stated that she had difficulty standing all day due to "*back issues and peripheral neuropathy.*" Such presence of persistent pain stimuli can alter the brain chemistry and increase the risk of developing acute pain or another site of CP, which in turn can increase the intensity and duration of CP (Mills et al., 2019). Other participants requested quiet space, as workplace environmental factors can heighten stress; creating quiet, serene spaces can reduce these stresses (Applebaum et al., 2010; Salmela et al., 2020). As 1 nurse reported, "*I have noticed that when I am in pain, my whole body becomes stiff. I would like to sit alone and chart for a minute before the next patient comes in.*" These serene spaces can encourage mindfulness-based activities such as yoga that can reduce stress, CP, and compassion fatigue and increase problem-solving, well-being, and resilience (Bonamer & Aquino-Russell, 2019). In addition to time and space for self-care, 40% requested support from pain management professionals at the workplace. As noted in a systematic review of nurses' injury and pain, Richardson et al. (2018) note in 20 studies that education alone on safe lifting practices resulted in less than a 40% decrease in preventing lifting injuries which could be vital to radiology nurses who often work independently. The CDC states that a multidisciplinary and patient-centered approach is best when managing CP (Manchikanti et al., 2020; Mills et al., 2019). In addition to ergonomic equipment, stretching exercises have helped with musculoskeletal pain (Shariat et al., 2018). A multidisciplinary approach to CP management focuses on restoration through rest and rehabilitation through acupuncture, biofeedback, chiropractic therapy, epidural steroids, medication management, and physiotherapy (Cheng & Cheng, 2019; Kim, 2015; Ko & Hayek, 2015; Kumar et al., 2015). Nurses also request support and empathy from peers and employers, and nurse managers can create supportive healthier environments, decrease burnout, and compassion fatigue, and increase job satisfaction (Al Barmawi et al., 2019).

These results fulfilled the study's aims and presented data that CP affects nurses' professional and personal duties ($p < .001$). Even during the unprecedented stress of COVID-19, nurses care for their families, patients, and colleagues (Sitzman & Carven, 2021). Furthermore, the narrative feedback revealed that nurses' requested a multidisciplinary approach to manage their pain management journey. These findings could benefit healthcare settings as they join with their nurses to develop self-care strategies in the 5 domains of the Healthy Nurse, Healthy Nation™ initiative: (a) safety, (b) quality of life, (c) nutrition, (d) physical activity, and (e) rest (ANA, 2018). Healthy nurses could then bring their full presence and fulfill their calling and most profound expression of self at work (Dik et al., 2015; Sitzman & Watson, 2018; Rosso et al., 2010).

Limitations

This survey was conducted in English through social media sites that supported local nurses. This method did not provide access to nurses who need help understanding English, are not part of social media support groups, or do not use electronic communication. It should be noted that this survey was administered during the initial wave of the COVID-19 pandemic, and the unprecedented stress on nurses may have heightened their experience of CP. Finally, a future survey should be conducted with a known sample with documented CP diagnosis.

Conclusion

Radiology nurses working independently are potentially at a higher risk for injury and infections, especially during a pandemic. This anonymous, voluntary invitation-link survey of frontline workers provided self-reports that CP affects nurses' professional duties and personal lives. A majority of the respondents reported having CP frequently. Most nurses requested multidisciplinary interventions that included ergonomic equipment, time to practice self-care, support from their managers, and onsite help from pain management professionals. Evidenced-based literature states that the multimodal strategies requested by participants can be effective in managing chronic pain outcomes. By investing a fraction of the costs, it takes to rehire new nurses, healthcare systems could create health programs based on this data to help improve nurses' well-being and reduce their risk of developing long-term complications of CP. By helping nurses with CP management, hospital systems would upload the Healthy Nurse, Healthy Nation™ initiative to provide a safe work environment for nurses that would improve their quality of life.

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Supplementary data

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