Introduction

Personal health status depends primarily on the economic sector and the working environment in which an individual is engaged. Therefore, the factors that determine the development of a disease depend on the conditions under which work is carried out.

Nursing involves a high degree of responsibility, given its ongoing contact with patients, suffering, sadness, and death. The climate of the workplace, the workload, irregular hours, and shortages of supplies, in addition to precarious working conditions that are increasingly more common in the labor market (De Córdova et al., 2013; Nigenda et al., 2020), have resulted in nurses working under adverse conditions, which causes physical and mental exhaustion and thereby affects worker health.

The Mexican public health system allocates 2.5% of total gross domestic product to health, which places it below the Organisation for Economic Cooperation and Development average of 6.6% (National Council for the Evaluation of Social Development Policy, 2018) and lower than the amount required to provide an optimal health system. The Mexican government has reduced the inputs, hiring, and staffing necessary to optimize resources destined for the health system, resulting in excessive workloads, ongoing conflicts related to job scheduling (hours, shift rotations, and long workdays), an authoritarian work atmosphere, and burnout (Silva et al., 2016), which directly affect the nursing profession and harm the jobs, social relationships, and family lives of nurses. In Mexico, unfavorable conditions in nursing have negatively impacted the quality of medical care and the working conditions of those who provide nursing services in hospitals, resulting in fewer resources allocated to staff, increased work activities carried out by fewer workers, and time limitations on patient care (De Córdova et al., 2013; Gonzalez-Cruz et al., 2016).

Under these conditions, violence in the workplace is common, as are poor working conditions, staff shortages, and effects on workers’ health. These unhealthy environments contribute to the development of occupational illnesses and emotional disorders (Silva et al., 2016).
**Burnout in Nursing**

Stress from work activities can generate burnout, a syndrome that has been studied by various authors over time. The best-known definition is the one proposed by Maslach and Jackson, who consider burnout to be “a three-dimensional syndrome characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment” that may occur among individuals whose work involves caring for or helping people (Maslach & Jackson, 1981).

In 2000, the World Health Organization (WHO) declared burnout to be a work-related risk factor that affects the quality of life and mental health of workers (WHO, 2004). Therefore, to regulate this growing problem, the WHO’s World Health Assembly finally recognized the psychological effects of burnout as a syndrome, which was added as an “occupational phenomenon” in the most recent (2020) International Classification of Diseases Revision 11 (as cited in Woo et al., 2020).

Burnout syndrome is characterized primarily by three dimensions. Emotional depletion or exhaustion is a dimension that occurs when workers are no longer able to perform their activities as normal, and physical and emotional exhaustion is present from ongoing contact with individuals under their care, resulting in health problems. The depersonalization dimension is characterized by negative emotions toward others and worker indifference and insensitivity because of emotional exhaustion, resulting in unsuitable behaviors because of the problem that is being experienced. The third dimension is reduced personal accomplishment, in which professionals negatively value their skills or experience in dealing with others and feel dissatisfied with themselves and their work (Gill-Monte et al., 2006).

Some studies have indicated that the prevalence of burnout syndrome is higher among security forces, professors, and healthcare providers, particularly physicians and nurses, in which respective levels of prevalence of 19% and 18% have been found (De la Fuente et al., 2013).

Nurses comprise a group that is particularly vulnerable to psychological problems because of their work activities, given that their job situations involve contact with work-related risks as well as organizational demands that exacerbate episodes of stress and physical and emotional exhaustion (Álvarez et al., 2013).

Several studies have addressed the scientific literature on burnout, finding that prevalence varies greatly for each level of the syndrome, with some studies reporting intermediate and high values (Arias & Muñoz, 2016) and others reporting low levels of prevalence (de Paiva et al., 2017; Mercés et al., 2020).

Díaz and Gómez (2016) carried out a systematic review of 89 studies on burnout published in scientific journals from 12 Latin American countries. They found that those studies focused primarily on determining the presence of the syndrome or its dimensions in the nursing profession, whereas some were also designed to determine levels as well as the specific variables that affect the presentation of burnout.

A series of sociodemographic variables has been identified as being associated with the development of burnout syndrome. These variables include being female, being over 30 years old, working in the home, working over 40 hours, caring for more than 10 patients, working for 6–10 years in hospital settings, and working in the nursing profession for over 10 years (de Paiva et al., 2017). These variables act as risk factors that make staff more vulnerable to experiencing some of the dimensions of burnout.

In 2015, Salazar analyzed studies conducted in Europe (Turkey, Germany, Norway, Portugal, and Switzerland), Asia (China, Japan, and Taiwan), and the Americas (Mexico, Colombia, and United States), in which high stress levels, number of work hours, shift rotations, younger age, and low levels of work satisfaction were found to be associated with overall burnout, although not with its underlying dimensions.

According to recent data, nurses are continually faced with stressful situations such as excessive workloads, exposure to settings involving death and suffering, problems with hierarchy, uncertainty related to treatment, temporary transfers to other services because of staffing shortages, working with highly complex patients, having a low level of education or knowledge, and lacking emotional support (André et al., 2016). These situations increase the likelihood of experiencing emotional exhaustion (Cañadas-De la Fuente et al., 2015).

Studies conducted in different countries have identified a relationship between depersonalization and factors such as being in the profession for over 5 years (Muñoz et al., 2018), excessive workloads (Kakemam et al., 2019), social interaction, and organizational factors (da Silva et al., 2015). Higher levels of depersonalization negatively affect the psychological well-being of nurses, producing demotivation and poor work performance.

Reduced personal accomplishment has been found to be primarily associated with night shifts (Vidotti et al., 2018), inadequate job training, and perceived stressful work (Baldonedo-Mosteiro et al., 2019). Meanwhile, being younger and having worked less time in the profession have been identified as negatively influencing the value one places on one’s professional activities, supporting that lack of experience and skills results in professional and job dissatisfaction (Álvarez et al., 2013).

Consequently, nursing professionals who are affected by burnout syndrome present tiredness, lack of concentration, insomnia, exhaustion, low self-esteem, anxiety, depression, and other effects. These effects subsequently increase workplace absenteeism, poor job performance, and criticism of the institution and reduce the quality of care provided to patients (Bridgeman et al., 2018). Therefore, burnout syndrome is a problem that needs to be addressed.

Therefore, this study was aimed at identifying whether working conditions and the stress these conditions produce are associated with the presence of burnout and its underlying dimensions. The hypothesis of this study is that poor working conditions are associated with developing syndrome components, whereas valuing one’s work reduces the likelihood of developing syndrome components.
Methods

Study Design
A cross-sectional, observational, analytical study was performed. The study results were reported in accordance with the Strengthening the Reporting of Observational Studies in Epidemiology checklist (Von Elm et al., 2008).

Study Population and Setting
This study was conducted at a tertiary care health institution located in an urban section of Mexico City that is currently part of the Mexican National Health System. The study included nursing staff with direct patient contact who worked in the areas of hospitalization, surgery, intensive care, admissions, outpatient consultation, and the equipment and sterilization center.

Ethical Considerations
The project was approved by the ethics and research committee of the hospital (No. CE/16/590) and Universidad Autónoma Metropolitana (No. 34509026). The participants provided informed consent and were given a description of the study’s objective, its possible implications, and assurances of data confidentiality. Participation was voluntary, and the participants were permitted to withdraw from the study at any time. Personal data related to the individuals were excluded from the data analysis.

Sample Size
The sample used in this investigation was the third and last round of a longitudinal study that was aimed at analyzing working conditions associated with the development of mental and musculoskeletal disorders in a group of nurses in a public hospital in Mexico City, which are the most frequent work-related disorders (Instituto Mexicano del Seguro Social, 2019). The hospital provides care for patients with complex pathologies who require specialized procedures and treatments that employ high technology. The details of the initial sample calculation are described in Zamora-Macorra et al. (2019).

The sample from the first round in 2017 was selected using a simple random process based on a list of all 1,802 nursing staff who were active at the time. A two-stage cluster sample was selected. In the first stage, the largest services in the hospital were selected, which also had the most demand. The second step consisted of taking a simple random sample in each of the services. The sample size calculated, based on a countrywide prevalence of musculoskeletal disorders of 20% (Instituto Mexicano del Seguro Social, 2019) to determine a minimum target sample size of 380 participants. The first round was conducted in 2017, in which 329 participants were interviewed (87% of the initial sample). The second round was carried out in 2018 on 185 active nursing professionals. The sample for this study was composed of 190 participants from services chosen based on the 329 participants from the first round as the sampling framework. Nursing staff from the list of participants in the first round of the study were invited to participate, and 58% provided informed consent. The remainder chose not to participate or were on vacation or on leave. The surveys were carried out over a period of approximately 8 weeks from June to July 2019.

The selection criteria were as follows: nursing staff from all three shifts who worked in direct contact with patients, were present when the questionnaire was administered, and were not on vacation, break, and/or sick leave.

Instruments
Data were collected using a survey questionnaire administered to each participant. The questionnaire assessed value, working conditions, and work demands based on some of the sections of the individual Survey for the Evaluation and Follow-up of Health Workers (Noriega et al., 2001). This instrument is in the process of being validated for the Mexican population and is composed of a series of dichotomous questions designed to explore the work setting. Work was evaluated based on 10 questions with dichotomous responses. This was used to generate a work index value, which was calculated as the sum of the questions divided by the total number of interviewees, with values ≤ 0.59 associated with a negative index and values ≥ 0.60 or greater associated with a positive index (Noriega et al., 2001).

The Nursing Stress Scale was used in this study to evaluate the stressful work situations to which the nursing staff was exposed and that negatively affected their health. This scale contains 34 items grouped into seven risk factors: workload, death and suffering, inadequate training, lack of support, uncertainty about treatments, social environment in the hospital, and interpersonal conflicts with healthcare personnel or with other members of the nursing staff. The questions are scored on a Likert scale, with values ranging from 0 to 3. The items were summed, and the 75th percentile was considered the cutoff for obtaining a dichotomous variable (Escribà et al., 1999).

Burnout syndrome was assessed in this study using the Maslach Burnout Inventory, which includes 22 items scored on a Likert scale and measures three aspects or dimensions, including emotional exhaustion, depersonalization, and reduced personal accomplishment. The three dimensions were dichotomized by grouping the low and moderate levels together and comparing these against the high level.

Data Processing and Analysis
JMP 11.0 statistical software (SAS Institute, Inc., Cary, NC, USA) was used for data processing and analysis. A bivariate analysis was conducted using chi-square tests to identify the variables relevant to the multivariate analysis. Subsequently, a series of logistic models was generated, fitted by age, gender, and length of time on the job. On the basis of this, the odds ratios were obtained, which were transformed into prevalence ratios. The different dimensions of burnout were treated as dependent variables, and working conditions and stressful situations were treated as independent variables. The assumptions of the models were tested in all cases.
Finally, a cluster analysis, which is a multivariate method used to group people with the same variance together to determine whether the variables studied are associated with the likelihood of developing a particular disease, was performed. A hierarchical cluster analysis was carried out, and the Ward’s minimum variance method with squared Euclidean distance was used to determine the number of clusters in a dendrogram. A correspondence analysis was performed using a chi-square test to analyze whether the clusters were associated with the different dimensions of burnout.

Results

Sociodemographic Variables
The participants in this study were mostly women (93%), with an average age of 43 years. More than half held a bachelor’s degree, 25% held a technical degree, and 18% had a specialty, master’s, or doctorate degree. Nearly two thirds (63%) of the participants had a partner (Table 1).

Working Conditions
In terms of the conditions under which the nursing staff carried out their work in the hospital, 90% performed activities that involved direct patient contact. Over half worked the day shift, and only 21% worked the night shift. The average amount of time working in nursing was 19 years. Nine of 10 were salaried, whereas 6% were temporary workers. Each nurse cared for an average of nine patients per 8-hour work shift (Table 1).

Nursing Demands, Stressors, and Value of Work
With regard to work demands, nine of 10 spent most of their day standing while performing their activities, 78% performed tedious tasks, and more than half remained in one place with tense shoulders, were not able to take a break from their work for more than 5 minutes, and were subject to strict supervision. More than one quarter received confusing or unclear orders from their supervisors and could not communicate with their coworkers. Only 5% perceived their activities as degrading (Table 1).

The participants perceived their work as being highly appreciated, with a positive value of work index of 81%. Nearly the entire population perceived that they perform interesting work that satisfies them and gives them an opportunity to learn. Nevertheless, only 32% expressed hoping that their children would enter the same profession (Table 1).

As shown in Table 1, the sources of stress that most often affected the participants were excessive workloads (65%), feeling inadequately prepared to emotionally help patients or their families (46%), uncertainty about the treatment that physicians prescribed for the patients (44%), and interpersonal conflicts with healthcare personnel (24%). The internal consistency of the instrument was measured using Cronbach’s alpha, yielding values of .75–.85 between stress factors.

| Table 1 | Sociodemographic Variables and Working Conditions of the Participants (N = 190) |
|---------|---------------------------------------------------------------|
| Variable | n     | %   |
| Sociodemographic variables | | |
| Age (years; M and SD) | 43.0 | 8.1 |
| Gender (female) | 177 | 93 |
| Education | | |
| Bachelor’s degree | 109 | 57 |
| Technical training | 47 | 25 |
| Specialty/master’s/doctorate | 34 | 18 |
| Marital status (with partner) | 120 | 63 |
| Working conditions | | |
| Work shift | | |
| Day | 107 | 56 |
| Evening | 44 | 23 |
| Night | 39 | 21 |
| Time worked (years; M and SD) | 19.2 | 8.6 |
| Type of employment (salaried) | 179 | 94 |
| Patients treated (per day; M and SD) | 9.0 | 19.8 |
| Demands a | | |
| Remain standing while working | 177 | 93 |
| Perform tedious tasks | 149 | 78 |
| Stay stationary in your work space | 112 | 59 |
| Tense shoulders | 113 | 59 |
| Unable to take breaks (5 minutes) | 103 | 54 |
| Subject to strict supervision | 102 | 54 |
| Perform work that may harm health | 100 | 53 |
| Receive confusing orders from bosses | 49 | 26 |
| No communication with coworkers | 46 | 24 |
| Night shift | 43 | 23 |
| Perform denigrating work | 9 | 5 |
| Value of work a | | |
| Interest toward work | 187 | 98 |
| Job satisfaction | 185 | 97 |
| Acquisition of new knowledge | 184 | 97 |
| Work is important to their bosses | 132 | 70 |
| Would like children to do the same work | 61 | 32 |
| Positive work index value | 154 | 81 |
| Stressors a | | |
| Workload | 123 | 65 |
| Inadequate training | 87 | 46 |
| Uncertainty about treatment | 84 | 44 |
| Lack of support | 72 | 38 |
| Death and suffering | 68 | 36 |
| Problems with other nursing staff | 52 | 27 |

* Multiple choice.

Burnout and Its Dimensions
This study found that 22% of the nurses in this study presented a reduced sense of personal accomplishment and 12% presented emotional exhaustion and depersonalization. In the analysis of internal consistency, the Cronbach’s alpha values for the subscales were .90 for emotional exhaustion, .73 for depersonalization, and .76 for reduced personal accomplishment.
Variables Associated With Various Mental Health Effects

The emotional exhaustion dimension had the greatest number of associations, with a higher prevalence among those reporting being inadequately trained (prevalence ratio [PR] = 5.33, 95% CI [1.87, 15.15]), having problems with other nursing staff (PR = 4.64, 95% CI [2.07, 10.41]), self-perceiving as performing denigrating work (PR = 3.17, 95% CI [1.15, 8.78]), and having no communication with coworkers (PR = 3.13, 95% CI [1.45, 6.74]; Table 2).

Depersonalization was more common among those who self-reported as having an excessive workload (PR = 5.58, 95% CI [1.31, 22.6]), being under strict supervision (PR = 2.96, 95% CI [1.13, 7.63]), and having problems with other nursing staff (PR = 2.67, 95% CI [1.22, 5.74]; Table 2). A positive value of work decreased the presence of depersonalization by roughly 70% (PR = 0.33, 95% CI [0.16, 0.73]).

The study found a lower prevalence of reduced personal accomplishment among those who indicated that they would like their children to work in the same profession (PR = 0.5, 95% CI [0.26, 0.97]) and those whose supervisors valued their activity (PR = 0.5, 95% CI [0.31, 0.81]). The prevalence of this dimension was twice as high among the participants who worked the night shift (PR = 2.12, 95% CI [1.31, 3.43]; Table 2).

Cluster Analysis

Three clusters were created based on the variables that the bivariate analysis identified as being associated with each of the dimensions of burnout: emotional exhaustion (nine variables), depersonalization (five variables), and reduced personal accomplishment (three variables). A correspondence analysis was then performed with a chi-square test to determine how the clusters were associated with the burnout dimensions.

After conducting the multivariate analysis, the nine variables found to be associated with emotional exhaustion were grouped, and three clusters were created. The second and third clusters were characterized by high scores for the variables of lacking communication with coworkers, receiving confusing or unclear orders from supervisors, performing work that represented a risk to their health, having conflicts with the multidisciplinary team, and lacking support. Performing denigrating work was a characteristic that distinguished the third cluster from the other two. This cluster had the greatest likelihood of presenting emotional exhaustion ($\chi^2 = 12.4, p = .0004$; Figure 1).

The cluster analysis of depersonalization found Cluster 2 to have the greatest likelihood of nurses developing negative feelings toward their activities and patients ($\chi^2 = 9.6, p = .0073$; Figure 2). This cluster comprised those participants with the highest scores for the variables of working under strict supervision, having problems with nursing staff, having an excessive workload, being constantly exposed to situations involving death and suffering, and having a low value of work.

The reduced personal accomplishment dimension was associated with Cluster 3, which was composed of professionals who primarily worked night shifts, indicating the specific weight that this factor has on the likelihood of having a fuller sense of personal accomplishment ($\chi^2 = 9.2, p = .0008$; Figure 3).

Discussion

This study was aimed at identifying the working conditions and stress factors in nursing that relate to the development of the several dimensions of burnout syndrome.

Table 2

| Variable                                | Yes | No | PR   | p    | 95% CI     |
|-----------------------------------------|-----|----|------|------|------------|
| Emotional exhaustion                    |     |    |      |      |            |
| Inadequate training                     | 20.7| 5.4| 5.33 | <.001| [1.87, 15.15]|
| Problems with other nursing staff       | 26.9| 4.7| 4.64 | <.001| [2.07, 10.41]|
| Perform denigrating work               | 33.3| 3.2| 3.17 | .014 | [1.15, 8.78]|
| No communication with coworkers         | 23.9| 3.1| 3.13 | .060 | [1.45, 6.74]|
| Depersonalization                       |     |    |      |      |            |
| Workload                                | 16.3| 2.9| 5.58 | .007 | [1.31, 22.6]|
| Subject to strict supervision           | 16.7| 5.7| 2.96 | .021 | [1.13, 7.63]|
| Problems with other nursing staff       | 21.2| 7.9| 2.67 | .026 | [1.22, 5.74]|
| Positive work index value               | 8.4 | 25.0| 0.33 | .018 | [0.16, 0.73]|
| Reduced personal accomplishment         |     |    |      |      |            |
| Night work                              | 41.9| 19.7| 2.12 | .003 | [1.31, 3.43]|
| Would like children to do the same work | 14.8| 29.5| 0.50 | .027 | [0.26, 0.97]|
| Work is important to their bosses       | 18.9| 37.9| 0.50 | .009 | [0.31, 0.81]|

Note. PR = prevalence ratio adjusted by age, gender, and seniority.
The results identified a relatively low prevalence of emotional exhaustion, depersonalization, and reduced personal accomplishment. Higher rates of prevalence have been highlighted in studies such as Alqahtani et al. (2019), which identified burnout in over one fifth of the study population, and Rendón et al. (2020), which found evidence of burnout syndrome in nearly six of 10 studied nurses.

Systematic reviews of burnout and the factors associated with this syndrome have reported that intermediate and high values are commonly found for the dimension of emotional exhaustion. However, in this study, depersonalization values were found to be low (12%), whereas high values were found for highly demanding hospital services such as emergency services and intensive care. This difference may be explained by this study’s population working in many different areas of the hospital.

Reduced sense of personal accomplishment is highly associated with the degree of satisfaction with and perceived value of work. In this study, the prevalence of this dimension was found to be low (25%), which may be explained by the population

Figure 1
Analysis of emotional exhaustion correspondence and clusters

Figure 2
Analysis of depersonalization correspondence and clusters
highly valuing their professional activities (Adriaenssens et al., 2015; Gómez-Urquiza et al., 2017).

A low prevalence of emotional exhaustion (12%) was also found in this study. Emotional exhaustion is a dimension that relates to inadequate training, problems with the work team, low value of work, and lack of support and communication. Several studies have associated this dimension with workload and lack of control as well as with shortages of staff and material resources (Adriaenssens et al., 2015). A lack of autonomy, little control over the work environment, and conflicts with physicians have been found to be relevant (Arias & Muñoz, 2016), whereas other studies have found an association between lack of resources and high levels of emotional exhaustion (Li et al., 2019). Furthermore, Bernaldo-De-Quirós et al. (2015) reported the presence of physical violence/verbal abuse and depersonalization as important predictors of this dimension.

The associations with the depersonalization dimension found in this study echo Grisales et al. (2016), who reported an increase in the prevalence of this dimension because of staff uncertainty about the recovery or death of patients as well as of a lack of social support and conflicts with physicians and coworkers.

Studies have documented that depersonalization is a coping strategy that enables personnel to distance themselves from highly demanding working conditions that are stressful and harmful (e.g., excessive workloads, role conflicts, unfavorable working environments, and emotional demands from working with patients) and that surpass their physical and emotional abilities. These factors contribute to disinterest, demotivation, and lack of attention, which contribute to negative feelings toward both the task and patients (Marsollier, 2013). García-Izquierdo and Ríos-Rísquez (2012) found that workload, unstable employment, and the presence of interpersonal conflicts predict the presence of this dimension.

This investigation found an association between workload and depersonalization. In Mexico, nursing staff have excessive workloads as a result of changes that have been made in the National Health System over recent decades, which have reduced the health sector’s budget. In addition, the demand for services is increasing, supplies are insufficient, and there are no new hirings, producing a highly demanding environment for nurses in the public sector (Mesa-Melgarejo & Romero Ballén, 2010).

A higher prevalence of having a low sense of personal accomplishment was found among the participants who regularly worked night shifts, which is consistent with the 2018 study by Vidotti et al. Night shift work negatively affects family and social relationships as well as the use of free time. García-Izquierdo and Rios-Risquez (2012) reported that professionals who worked a fixed day shift schedule had higher levels of satisfaction than those who worked rotating shifts.

In this study, risks of depersonalization and reduced personal accomplishment were found to be lower when positive work elements such as having decision-making power related to tasks, the opportunity to develop creativity and initiative, and superiors recognizing and valuing their work were present. Similarly, Van Der Heijden et al. (2017) identified good professional development and social interaction as protective factors, whereas Prochnow et al. (2013) found that personnel who made decisions about their activities and had autonomy and control over their work handled their psychological pressures better and had a decreased risk of experiencing certain types of psychological disorders.

The strengths of this study include working with a randomly selected population, which resulted in the sample
representing all areas of the hospital and a diverse range of staff positions. Furthermore, the measurements were made using reliable and valid instruments. Although this study found a low prevalence of burnout syndrome, it identified the most-representative working conditions associated with each dimension. The cluster analysis made it possible to determine the set of work demands placed on the workers and the demands that are more closely associated with the three dimensions of burnout.

The relatively low response rate represents a limitation of this study. Only 58% of the targeted sample of 329 nursing professionals participated. Some declined to participate because they perceived their working conditions as worsening. Although the low response rate may have introduced a nonresponse bias, the random selection of participants considerably reduced its potential impact on the results. Finally, the cross-sectional design used in this study did not allow for differentiation between the temporality of exposure and outcome.

**Conclusions/Implications for Practice**

In this study, the different working conditions experienced by nursing professionals were identified and the associations between these conditions with the three dimensions of burnout syndrome, including emotional exhaustion, depersonalization, and reduced personal accomplishment, were established.

The findings support that having a high work index value acts as a protective factor by increasing worker satisfaction. This considerably decreases the influence of the syndrome, thus reducing the influence of each of its dimensions.

In addition, the findings support that nursing professionals who are responsible for patient care are exposed to demands related to work quality, content, and supervision. These situations shed additional light on the current problems experienced by nurses in Mexico.

Situations that produce high levels of stress for nursing professionals include lacking adequate training opportunities, having excessive workloads, and experiencing problems with other nursing staff. These situations significantly impact the physical and psychological well-being and work performance of nurses.

Finally, the findings of this study support that relevant units in hospitals should take suitable measures to address the problem of professional burnout, because constant exposure to unfavorable settings produces adverse situations that increase the vulnerability of nurses to psychological disorders.

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**Author Contributions**

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