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Editorial

Loneliness and Social Isolation: Risk Factors Long Overdue for Surveillance

Every year at this time, when we are fully immersed in the holiday season, many of us struggle to find a few quiet moments amid the decorating, shopping, baking, partying with friends and colleagues, and competing schedules to enjoy some quality time with those we love. In the midst of these frenetic interactions, it may be nearly impossible to recognize that for many others, the traditional holiday season may not herald silver bells and tidings of great joy, but long, sleepless nights with countless reminders that they lack meaningful engagements with others. If we give that frame of reference a momentary consideration, we might view social isolation or loneliness as sad or unfortunate, particularly during the holiday feasts of family and fellowship. As nurses, however, a growing body of research suggests that social isolation and loneliness warrant our immediate attention as seriously lethal health risk factors on par with smoking and hypertension. Can one die from loneliness and/or social isolation? Some of these studies suggest that these conditions can be held accountable for increasing mortality, so perhaps we are already overdue to initiate their close surveillance.

Differentiating Between Loneliness and Social Isolation

Although loneliness and social isolation are frequently discussed together and share roughly comparable prevalence rates ranging between 10% and 30%,[1-3] and more recently reported approaching 43%,[4,5] the terms are not synonymous or equivalent. Neither term has a universally accepted definition, but a number of characterizations have been offered for each.

Definition of Loneliness

Some of the early definitions of loneliness characterized it as a lack of social intimacy[6] or as a deficiency in social relationships.[7] Loneliness is often described as a subjective feeling of isolation, not belonging, or lacking companionship.[4,8,9] Steptoe et al contend that loneliness is frequently considered as "the psychological embodiment of social isolation."[10(p5797)] Other experts in this area define loneliness more explicitly as a distressing feeling associated with discrepancies between one's desired and actual social relationships.[11] The latter may help to explain how a person can feel lonely despite living with a spouse or other family members,[4] or living with many other people in a community or institutional setting.

Definition of Social Isolation

Nicholson[12] defines social isolation as the following:

> a state in which the individual lacks a sense of belonging socially, lacks engagement with others, has a minimal number of social contacts and they are deficient in fulfilling and quality relationships.[12(p1346)]

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doi: http://dx.doi.org/10.4037/ccn2013377

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Social isolation is also defined as the absence of relationships with family or friends on an individual level, and with society on a broader level. The absence or weakness of a person's social network indicates whether the person is socially isolated.[9] Other researchers in this area define social isolation in a more structured manner, describing it as an objective and quantifiable reflection of the paucity of one's social contacts and the reduced size of their social network.[10]

Detrimental Effects of Loneliness on Health

Effects of Loneliness

Research examining loneliness has identified a variety of functional, psychosocial, and physiologic ill effects, including the following:

- Diminished physical activity[13]
- Diminished motor function[14,15]
- Symptoms of depression[16]
- Disrupted sleep and daytime dysfunction[17]
- Impaired mental and cognitive function[18]
- Increased systolic blood pressure[19]
- Increased sympathetic tone and vascular resistance[20,21]
- Increased hypothalamic pituitary adrenocortical activity[22,23]
- Altered gene expression related to anti-inflammatory responses[24]
- Altered immunity[25,26]

Of greater concern, however, is an accumulating volume of research that highlights loneliness as a risk factor for both functional decline as well as increased mortality.[4,8,27-29] In short, there is evidence that the subjective experience of loneliness can significantly contribute to premature death independently of other physical, behavioral, or psychological factors.

Perissinotto et al[4] studied 1604 adults older than 60 years enrolled in the Health and Retirement Study[30] and looked at relationships of loneliness with functional decline and death over a 6-year period. Subjects were categorized as lonely if they indicated "often" or "some of the time" to any of 3 items: whether they felt left out, isolated, or lacked companionship. Lonely adults reported considerably more diminished functional abilities than their nonlonely peers: declines in activities of daily living were more than 50% higher (24.8% vs 12.5%; adjusted risk ratio [RR]=1.59; 95% CI, 1.23-2.07); declines in mobility via walking or jogging were 18% higher (38.1% vs 29.4%; adjusted RR=1.18; 95% CI, 0.99-1.41); and 31% were more likely to have problems climbing stairs (40.8% vs 27.9%; adjusted RR=1.31; 95% CI, 1.10-1.57). A more striking finding was that loneliness was associated with an increased risk of death (22.8% vs 14.2%; adjusted hazard ratio [HR]=1.45; 95% CI, 1.11-1.88). Even after adjusting for variables such as current medical conditions or a prior diagnosis of depression that might account for poor health, study subjects who were lonely were 45% more likely to have died over the 6-year study than those who were not lonely. The authors concluded that for adults older than 60 years, loneliness represented a predictor of both functional decline and death.

Similarly, with a nationally representative sample of 2101 US adults aged 50 years and older from the same Health and Retirement Study project, Luo and colleagues[8] found that loneliness was associated with increased mortality risk throughout the subsequent 6-year period (odds ratio [OR]=1.14; 95% CI, 1.06-1.23), that older adults with the highest levels of loneliness were nearly twice (1.96 times) as likely to die within 6 years compared to those with the lowest levels of loneliness, and that this heightened mortality effect was not explained by social relationships or health behaviors.

Proposed Mechanisms

A number of studies have identified possible mechanisms to explain how loneliness leads to decremental health changes. For example, a 1994 study from Japan identified a person's chronic diseases, functional status, and self-rated health as major contributors to this decline.[31] A more recent study attributed these effects to a combined interaction among 3 health outcomes: depressive symptoms, self-rated health, and functional limitations. Among these factors, only functional status and self-rated health appeared to constitute proximal mechanisms by which loneliness increases later mortality.[8]

Cacioppo and Patrick[32] summarized much of the research in this area by distinguishing 5 potential pathways through which loneliness may wreck havoc on one's health:

1. Loneliness may diminish a person's resolve and self-discipline over time, making them more likely to indulge in self-destructive behaviors such as drinking or eating to excess.

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2. People who describe themselves as lonely are also more likely to contribute to their social isolation by neglecting to engage with others or to secure emotional support.

3. In contrast to younger people who may or may not be lonely, middle-aged adults who say they are lonely also report increased exposure to stressors.

4. Loneliness produces objective and measurable effects on the immune and cardiovascular systems.

5. Loneliness is associated with a variety of sleeping disorders, including sleep deprivation, which, on a chronic basis, is associated with many of the same metabolic, neural, cellular, and hormonal consequences as those that occur with aging.

Detrimental Effects of Social Isolation on Health

Perhaps because of its frequent association with living alone and loneliness, social isolation has also received considerable research attention. Some of the recognized ill effects of social isolation include increased risk of developing hypertension and heart disease,[33] cognitive impairment,[34] infection,[35] pro-inflammatory responses,[36-38] and stress responses.[39] The pro-inflammatory responses represent a potential mechanism by which chronic inflammation mediates the link between social isolation and increased mortality.[37] Much of this work parallels findings related to loneliness, while some investigations reach dissimilar or contrasting conclusions. As with loneliness, a number of studies have established an association between social isolation and increased risk of mortality in a wide variety of patient populations:

- A 1993 study of 1376 British patients with acute myocardial infarction reported that those who self-identified as socially isolated (lacked membership in a religious group or club or lacked contact with family and friends) were 49% more likely to have died during the 3-year follow-up than those not socially isolated.[40]

- In 2001, Brummett and colleagues[41] reported that even after controlling for age and disease severity, patients with coronary artery disease who were socially isolated (3 or fewer people in their social support network) had significantly higher rates (RR = 2.43 [$P = .001$] for cardiac mortality [$P = .001$] and for all-cause mortality) than those not isolated.

- The inverse association between social network size and mortality was also evidenced in a sample of 7524 white women aged 65 or older who resided in 4 different US community settings. In this group, higher social network scores were a strong predictor of lower multivariate-adjusted mortality (RR = 0.92; 95% CI, 0.86-0.98).[42]

- A study of 2835 women from the Nurses' Health Study who were diagnosed with stage 1 to 4 breast cancer between 1992 and 2002 were assessed for social networks and social support at multiple intervals. Compared to those who were socially integrated before their diagnosis, women who were socially isolated had a 66% greater risk of death from all causes (HR = 1.66; 95% CI, 1.04-2.65) and a 2-fold greater risk of death from breast cancer (HR = 2.14; 95% CI, 1.11-4.12).[43]

- In a study that examined the relationship of psychosocial factors to mortality in outpatients with heart failure, 153 patients from 20 Sudden Cardiac Death in Heart Failure Trial sites were followed for a mean duration of 23.6 months. Regression analysis revealed that depression, anxiety, and social isolation separately predicted mortality. In addition, depression ($P = .04$, HR = 1.81) and social isolation ($P = .04$, HR = 2.25) predicted mortality independent of demographics, clinical status, and treatment.[44]

- When a prospective cohort study[45] of 4000 adults aged 65 to 84 years were followed for 10 years in the Netherlands, significantly more lonely men than women died. After controlling for other potentially explanatory variables (social isolation, psychiatric disorders, medical conditions, cognitive functioning, functional status, and sociodemographic factors), the mortality HR for loneliness was 1.30 (95% CI, 1.04-1.63) in men and 1.04 (95% CI, 0.90-1.24) in women. The study authors concluded that loneliness but not social isolation was a major risk factor for higher mortality in older men.[45]

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- In contrast to the Dutch study,[45] a 2013 United Kingdom assessment of 6500 men and women 52 years and older over 7.25 years found that although loneliness and social isolation were both associated with increased mortality, after adjusting for other potentially influential variables, social isolation remained significantly associated with mortality (HR = 1.26; 95% CI, 1.08-1.48 for the most isolated), whereas loneliness did not (HR = 0.92; 95% CI, 0.78-1.09), indicating that social isolation was an independent factor raising mortality, but loneliness was not.[10]
- To more closely examine the relationship between social isolation and mortality and to compare the predictive power of social isolation to that of traditional risk factors (elevated cholesterol, hypertension, smoking, obesity), California investigators used a nationally representative sample of 16 849 adults and found that socially isolated men and women had higher mortality than less socially isolated individuals and that social isolation predicted mortality for both genders, as did smoking and high blood pressure. The authors concluded that the strength of social isolation as a predictor of mortality is comparable to that of established risk factors, so its assessment by health care professionals is comparably important.[46]

How Critical Care Nurses Can Mitigate the Negative Health Effects of Social Isolation and Loneliness

Loneliness and social isolation are both potentially modifiable risk factors for premature mortality, so critical care nurses can contribute to their control by incorporating them into existing patient assessment, ongoing surveillance, and care management plans for other widely recognized clinical risk factors such as hypertension, obesity, and smoking. Both factors could be integrated into psychosocial or social history assessments or simply be added to the entries where other major health risk factors are examined. Until both factors are widely recognized and accepted as significant risk factors, it may be useful to launch this nursing influence via a plan with some of the following initial components:

- Summarize and disseminate information related to the body of evidence supporting the role of loneliness and social isolation as risk factors of premature mortality to critical care colleagues to enhance awareness of the detrimental effects of each on health.
- Once awareness of these issues has been heightened, designate time at regularly scheduled staff meetings for initial consideration of how critical care nurses might respond.
- Convene a dedicated work group/task force to examine this evidence in detail and design definitive strategies to accomplish the following:

  - *Adopt or develop an efficient and effective evidence-based tool for assessment of loneliness in critically ill patients.* Consider using the 3-item composite index of loneliness employed by Luo et al[8] and Perissinotto et al,[4] which asks how often the respondent feels (1) left out, (2) isolated from others, and (3) lacking companionship. This brief scale, adapted from the standard 20-item Revised UCLA Loneliness Scale,[47] has good internal consistency and both concurrent and discriminant validity.[48] Its 3-point response scale ranges from "hardly ever or never" to "some of the time" to "often," with 1 to 3 points assigned, respectively, to reflect a greater degree of loneliness. A loneliness index ranging from 3 to 9 is created by summing scores on the 3 items.

  - *Determine the scores that will prompt further follow-up by critical care or other health care staff.* Draft a set of nursing and social support interventions for patients at various loneliness index levels. For example, patients with a loneliness index of 3 may only need a plan for continued surveillance following hospital discharge; 4 to 6 may benefit from more definitive follow-up such as a scheduled care conference to examine the patient's current situation and to initiate plans for reversing any behaviors or circumstances that may be contributing to detrimental health effects; 7 to 9 may warrant more immediate and inclusive interventions to

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prevent the potentially ravaging effects of loneliness on the patient's health.

- *Adopt or develop an efficient and effective evidence-based tool for assessment of social isolation in critically ill patients.* Consider using the modified version (only 4 of 18 items) of the Social Network Index[35] that Pantell and colleagues[46] used to measure social isolation. Respondents receive a score of 0 or 1 for each domain (marital status, frequency of contact with other people, participation in religious activities, participation in club or organization activities). A number of other instruments that measure social isolation are described and compared for your reference[49] and include the following:
  1. De Jong Gierveld Loneliness Scale[50,51]
  2. Lubben Social Network Scale[52]
  3. Medical Outcomes Study Social Support Survey[53]
  4. Multidimensional Scale of Perceived Social Support[54]

- *Obtain baseline data that describe the extent to which loneliness and social isolation are monitored as risk factors in your facility for later comparison with ongoing surveillance and management indicators to evaluate effectiveness of these measures.*

Summary

In this season of caring and good will, critical care nurses can bestow an invaluable gift to each of their patients by recognizing and ameliorating the suffering and potentially lethal effects that loneliness and isolation can inflict in their lives. With a brief investment of time and focused effort, you can make a difference today for all of their tomorrows. CCN

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