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Does Presence of an Intimate Friend has an Effect on the Level of Psychological Distress of Female Cardiovascular and Cancer Patients? An Analytical Study

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Abstract:
The study was taken up to probe whether the presence of an intimate friend has a significant impact on the level of psychological distress of female cardiovascular and cancer patients. The sample for the present study consisted of 225 women from Kerala, which consist of 75 cardiovascular (cvd) patients, 75 cancer patients selected using purposive sampling technique from the various hospitals across Kerala and a comparative group of 75 normals selected from the general population. The findings indicate that cvd patients categorized on the basis of presence of an intimate friend differed significantly in their level of stress and total psychological distress.Cvd patients who had an intimate friend have significantly lower level of stress and total psychological distress than who do not have an intimate friend. Cancer patients categorized on the basis of presence of an intimate friend showed no significant differences in their level of depression, anxiety, stress and total psychological distress.

Key words: social support, cardiovascular disease, cancer

1. Introduction

The concept of social support is almost as old as the Old World. Aristotle argued around 350 b.c. that friendship was a basic human need along with food, shelter, and clothing. "We naturally desire to love other human beings and to be loved by them. A totally loveless life—a life without friends of any sort—is a life deprived of much needed good" (Alcalay, 1983). Several centuries later, Paracelcus (1599), a physician, alchemist, and natural scientist, prescribed "love as the best possible cure for several diseases." The first scientific evidence of a link between social support and health was offered by Durkheim (1897/1951) in his extensive sociological studies on the origins of suicide and self-destructive behavior, in which he found that marriage and religion were the best protectors against such deviant behavior. Kropotkin (1908), a Russian ethologist and psychobiologist, stated that "mutual help and support is a factor of great significance for the maintenance of life and health in animals and in humans" (Kristina Orth-Gomér , 1994). Social ties and relationships with others have long been regarded as emotionally satisfying aspects of life. Recently, the possibility that they may also mute the effects of stress and help an individual cope has been explored by stress researchers with promising results. Social support is been defined as information from others that one is loved and cared for, esteemed and valued, and part of a network of communication and mutual obligations (Cobb, 1976). Social support is a complex construct encompassing diverse dimensions, including sources, types, and appraisal of social support, that should each be assessed. Social network characteristics (eg. the number of people from whom an individual can draw different types of support) have shown to positively influence the immune system and improve factors related to morbidity and mortality (Cohen and Herbert, 1996., Robles and Kiecolt-Glaser., 2006). Considerable evidence indicates that social support has beneficial effects for cardiovascular systems, endocrine functioning (eg. Catecholamines) and strong immune response (Uchino, Cacippo&Kiecolt-Glaser, 1996).In view of such findings, people must reach out to others to provide them with emotional support and learn to be open to the emotional support that others might offer.

There is considerable evidence to suggest that social support influences health status, health behaviour, and use of health services (House, Landir and Umberson, 1988).Dalgard et al., (1995) found that a good social support system, such as having one or more close friends or neighbours, decreases the effects of stressful life events, prevents the worsening of anxiety and depression, and thus helps to maintain a person's mental health. Research on subjective well-being indicates the many benefits of interpreting daily life in positive terms, being encaged in your work and in leisure activities, feeling a sense of purpose, and hoping for positive future outcomes (Myers and Diener, 1995).William et al., (2000) maintain that social hierarchy is the determining factor in the health of large populations largely because it promotes differences in stress or the ability to cope with stress. For example, as Japan has risen to the top ranks of the economic hierarchy of nations in the late 20th century, Japanese life expectancy improved dramatically. They noted that something lies behind this rapid increase in longevity and the major change was the

hierarchical position of Japan relative to the rest of the world. However Okinawans traditionally rank at the top in health and life expectancy and at the bottom in socioeconomic indicators. The social gradient thesis does not apply in Japan and suggest that what is more important for health are healthy lifestyles, especially diet and social support. More research is needed to assess the validity of the social gradient thesis if it is to be used on a cross-national basis.In regard to size of social network, studies show no relation to incidence (Reynolds and Kaplan, 1900), recurrence (Cassileth et al., 1985) or survival. In contrast, active social participation and active involvement have a positive effect on reduced recurrence (Hislop, Waxler, Coldman, Elwood and Kan, 1991).

Positive social support (family or friends) plays an important role in one's ability to make healthier choices. Social support means being able to access people that a person can rely upon if needed. The support of family and friends during a crisis has long been seen to have a positive emotional effect on people. However, this support also has a physical benefit as well. During stressful times, people tend to experience higher blood pressure and heart rates. However, the presence of friends or family members has been shown to reduce these rates among people during difficult periods.Janet Primomoet al, (2007) conducted a study to explore *who* in the network provided *what type of support* in relation to psychosocial *adjustment* for women experiencing chronic illness. The Norbeck Social Support Questionnaire was administered to 125 chronically ill women, along with measures of depression (CES-D), family illness demands (Demands of Illness Inventory), marital quality (Spanier Dyadic Adjustment Scale), and family functioning (FACES-II). Repeated-measures ANOVA was used to examine the average amount of support from four main sources: partner, family, friends, and others. Women perceived more support from the partner than from any other source. Family members provided more affective support than friends or others. Friends provided more affirmation than family or others. After the partner, women reported confiding about their illness more to health care providers, counselors, or religious personnel than family or friends. Pearson correlation coefficients were computed for the amount of support from each source and the measures of individual, dyadic, or family adjustment. In general, affect, affirmation, and reciprocity from both the partner and family were associated with less depression, higher marital quality, and better family functioning. Social support is very essential for people with chronic and terminal illness esp. cardiovascular diseases and cancer. It is seen that social support has a positive effect on these diseases.

1.1. Social Support and Cardiovascular Disease

In terms of chronic disease, the support of family or friends has been shown to lessen the chance that one will become sick or die from heart disease. Research conducted at Brigham Young University and the University of North Carolina showed that people who did not have strong social support were 50% more likely to die from illness than those who had such support (Blue, Laura, 2010). Family and friends are also important for those who have been diagnosed with chronic disease such as heart disease, high blood pressure and diabetes (Gallant, Mary P, 2003). Having such support systems is beneficial in helping patients follow a physician's recommendations. Strong social support will help patients adhere to their medical regimen by reminding them to Keep their medical appointments, take their medicines, get regular exercise, eat healthier foods etc. Finally, family and friends can also provide practical support, such as rides to the doctor or pharmacy, going to the supermarket, and offering childcare during health care visits. The encouragement of friends and co-workers can motivate people who have been ill to take steps to be more active and get back to work more quickly than those who do not have a strong support system.

Low social support confers a risk of 1.5 to 2.0 in both healthy populations and in patients with established CHD. However, there is substantial variability in the manner in which social support is conceptualized and measured. In addition, few studies have simultaneously compared differing types of support.Although low levels of support are associated with increased risk for CHD events, it is not clear what types of support are most associated with clinical outcomes in healthy persons and CHD patients. The development of a consensus in the conceptualization and measurement of social support is needed to examine which types of support are most likely to be associated with adverse CHD outcomes. There also is little evidence that improving low social support reduces CHD events (Lett et al, 2005).

Beverly Brummett and her colleagues (2013) found that CAD patients who had only 1-3 people in their social networks were nearly two and half times more likely to die of CAD than patients with four or more close friends. Patients recovering from heart disease, as well as their spouses, often experience a variety of psychological reactions that include depression, anxiety, anger, fear, guilt and interpersonal conflict. For cardiac patients, the most common psychological reaction to a myocardial infarction is depression.

Thomas et al., (2006) conducted the study to assess the relationship between social networksize and prospective mortality risk among a large sample ofolder, Caucasian women.The study included 7524 Caucasian community-dwellingwomen, age 65 or older (mean age = 74.1), who participated fromfour U.S. communities. Participants were followed for an average of 6 years after they had completed the year-2assessment. A total of 1451 deaths (19.3 %of sample) were observedover follow-up, 215 (3.4%) due to cardiovascular causes. Highersocial network scores were a robust predictor of lower multivariate-adjustedmortality (95%), controllingfor age, comorbid disease, body mass, smoking, depression, andeducation. However, social network benefits were attenuatedafter controlling for marital status. Married participants showedlower total and CVD covariate-adjusted death ratescompared with unmarried participants.Social network scores and marriage were each associatedwith reduced prospective mortality risk among older women. Therelationships shown here suggest that much of the protectionafforded by larger social networks in older women results frommarriage rather than other forms of social relationships.

1.2. Social Support and Cancer

"The buffering hypothesis" that social support may shield cancer patients from the effects of life stress on their emotional distress is supported (Koopman et al., 1998). Lack or less of social support has been proposed to affect the onset and course of cancer

(Sklar and Anisman, 1981).A long-term study of factor related to cancer incidence, mortality, and prognosis in Alameda County, California, found that women who are socially isolated were significantly elevated risk of dying from cancer of all sites (Kaplan and Reynolds, 1988).The positive and negative impacts of social support on cancer patients have also been studied. Patients with head and neck cancer were found to be more prone to psycho-social problems and social support might influence the patient's ability to adapt to the illness and its treatment (De Leeuw et al., 2000).High levels of reported social support have been positively associated with functional immune parameters in a number of populations at risk for stress related immune suppression, including cancer patients (Levy et al., 1990). Spouses of cancer patients (Baron, Cutrona, Hicklin, Russell and Lubaroff, 1990) and individuals reporting high levels of general stress (Schlesinger and Yodfat, 1991). These effects have been attributed to the ability of a strong social support network to minimize or buffer. Stress related decreases in immune function, perhaps by modulating stress effects on biological activities lies endocrine function or effects on behaviour such as sleep or diet. Neville (1998) tested the relationship between perceived social and familial support, feelings of uncertainity and relationships with health professionals among adolescents with cancer. The study concluded that there was an inverse relationship between perceived social/ familial support and uncertainity, a positive relationship between uncertainty and psychological distress. An interaction effect of perceived social support and uncertainty was found to explain 39% of the variance of psychological distress.

Schmidt et al., (2004) investigated psychological adjustment as a function of emotional intelligence, social support, and social constraints in 210 patients recruited via postings to Internet-based breast cancer support groups. Regression analyses indicated high social constraints and low emotional intelligence were associated with greater distress. Evidence suggested high emotional intelligence could buffer against the negative impact of a toxic social environment. Results support a social-cognitive processing model of adaptation to traumatic events and suggest consideration of emotional intelligence may broaden this model. Fogel et al., (2002) investigated the potential psychological benefits of Internet use for medical information by breast cancer patients. Of the 251 women approached, 188 were successfully interviewed (74.9%). Forty-two percent used the Internet for medical information related to breast health issues and did so for an average of 0.80 hr per week. The Interpersonal Support Evaluation List and the UCLA Loneliness Scale, with results controlled for covariates, showed that Internet use for breast health issues was associated with greater social support and less loneliness than Internet use for other purposes or nonuse. Breast cancer patients may obtain these psychological benefits with only a minimal weekly time commitment.Craig and Jayne (2005) examined hope in a sample of women diagnosed with breast cancer in relationship to independent variables of Social support, Resiliency and Self- esteem. The study also examined the relationship between social support and hope in women with breast cancer.Positive correlations were found between hope and independent variables of social support, resilience and self esteem. Positive correlations were found between social support and hope, given that the relationship between social support and hope remained statistically significantly in the analysis.

Weavers et al., (2007) examined 2 potential factors structures of the Benefit Finding Scale using confirmatory factor analysis, a single factor model with all items loading on a common factor and a multiple factor model, paralleling dimensions previously identified in the literature. Models were tested in 4 samples of medical patients: prostate cancer (n=185), breast cancer (n=110), AIDS (n=117). The single factor model was a poor fit for the data in all 4 samples. Six factors (Acceptance, Family relations, personal growth, World Wide View, Social Support, and Health Behaviours) derived through content analyses compromised the multiple factor model. Socio-demographic and disease related predictors were differentially related to BF factors across studies. These results suggest an alternate framework for the assessment of benefit finding using a multidimensional approach that may generalize across populations. Yu et al., (2006) examine the experience of Chinese-American women with breast cancer among several constructs-languages, sense of well-being, social/emotional support as well as religious/ spiritual support. Findings suggest that Chinese-American women with breast cancer appear to have better adjustment to their illness when they perceive themselves to have higher English Proficiency, sense of general well being and both social support and religious/ spiritual support. Despite the small sample size of the study, the implications of the general findings remain meaningful as an initial attempt to better understand the experience of breast cancer among Chinese-American women.

Carpenter and Kristen (2006) tests social support as a moderator between health status and psychological outcomes, specifically, it tests the stress-buffering hypothesis, which states that those under the most stress benefit from social support. The results for the psychological distress outcome indicated that those with better social support reported less psychological distress. Regarding the traumatic stress outcome, there is no evidence for a direct relationship and social support however; results did provide evidence for stress buffering. Specifically, perceived social support from friends and perceived availability of social resources appeared to protect patients from traumatic stress symptoms associated poor physical health status.Cancer patients often refer to their need for emotional support, which is widely believed to positively affect the course of disease. In one study, perceived family support did not predict recurrence (Levy, Heberman, Lippman, D'Angels and Lee, 1991).However, shorter survival was related to feeling isolated and lonely (only in women) and to having few contacts in men) (Reynolds and Kaplan, 1990) as well as to having a need for emotional support (Stavraky, Donner, Kincade and Stewart, 1988), whereas longer survival was related to perceived adequacy of family support (Stavraky et al., 1988) and to getting adequate emotional support (only in women).It is likely that social participation positively effects survival and disease progression because it hastens diagnosis and promotes compliance with treatment.Women who were rated by others as exhibiting low level of distress, who reported being fatigued and who complained about a lack of social support within their families tend to have lower levels of NK activity (Levy et al., 1985). The association between psychosocial variables and reduced NK activity in breast cancer patients was later confirmed by Levi et al., (1987). These investigators found that they could account for 30% of NK activity level variance at 3 months follow-up on the basis of baseline NK activity, fatigue or depression and lack of social support.

Micheal et al., (2002).,Pistrang and Barker, (1995) suggest a strong relationship between social support and adjustment to cancer. In general, individuals who report social support have lower levels of distress and use more adaptive coping techniques compared

to those who report less social support (Manne et al., 1999). Individuals reporting greater social isolation are more adversely affected but cancer, such that they experience decreased physical functioning, lower ratings of their quality of life, and increased fatigue (Michael et al., 2002).There is some evidence that social support may also serve as a buffer against disease progression. Higher levels of social support are associated with better survival outcomes and greater psychosocial adjustment for women diagnosed with cancer (Goodwin et al., 1987., Maunsell, Brisson and Deschenes, 1995).Henderson and Brown (1988) provided evidence for a negative association between psychological distress and the various indices of social support.

From the literature reviewed it is found that social support has an impact on the cvd and cancer patients. Having noticed the importance of social support for chronically ill, the investigator attempted to find out whether the presence of an intimate friend have any significant effect on the level of depression, anxiety, stress and total psychological distress of cardiovasular and cancer patients.

2. Methodology

2.1. Sample
The sample for the present study consisted of 225 women from Kerala, which consist of 75 cardiovascular patients, 75 cancer patients, and 75 normals. The cvd patients and cancer patients were selected using purposive sampling technique from the various hospitals across Kerala. Comparable group of normals were selected from the general population. Cardiovascular disease types selected for the study were coronary artery disease, cardiomyopathy, aneurysm, myocardial infarction, ischemic heart disease. The cancer types were breast cancer, ovarian cancer, lung cancer, colorectal cancer, thyroid cancer and cervical cancer.

2.2. Tools
The tools used for collecting the data were Personal data schedule and Depression Anxiety Stress scale (DASS 21). The Depression Anxiety Stress Scales 21 (DASS-21) developed by Lovibond, S.H and Lovibond, P.F is a set of three self-report scales designed to measure the negative emotional states of depression, anxiety and stress. Each of the three DASS 21 scales contains seven items, divided into subscales with similar content. The Depression scale assesses dysphoria, hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia, and inertia. The Anxiety scale assesses autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The Stress scale is sensitive to levels of chronic non-specific arousal. It assesses difficulty relaxing, nervous arousal, and being easily upset/agitated, irritable/over-reactive and impatient. The reliabilities of the DASS-21 scales were .88 for Depression, .82 for Anxiety, .90 for Stress, and .93 for the Total scale. The validities of the DASS- 21 for depression, anxiety and stress subscales were 337, 328 and 347, respectively.

2.3. Data Collection Procedure
Data were collected individually after ascertaining the willingness and co-operation on the part of the respondents. Incomplete response sheets were not scored and used for analysis.

2.4. Statistical Techniques
The statistical techniques used for analyzing the data were one-way ANOVA and Duncan test.

3. Results and Discussion
- Differences in the level of depression, anxiety, stress and total psychological distress based on presence of an intimate friend in the patient groups and the normals

The patient groups and the normals were categorized into two groups based on their presence of an intimate friend as follows: those who have an intimate friend and those who do not have an intimate friend. The *t*test was done to find out whether the cvd patients, cancer patients and normals categorized on the basis of presence of an intimate friend have any significant differences in their level of depression, anxiety, stress and total psychological distress. The details are given in Table No.1.

Variable	Group	Intimate Friend	N	Mean	Std. Deviation	t
Depression	Cvd	Yes	32	15.5625	6.06916	-1.167
		No	43	17.3023	6.78772	
	Cancer	Yes	23	10.4348	5.75110	.166
		No	52	10.1923	6.02296	
	Normals	Yes	22	8.2727	4.87151	1.800*
		No	53	6.2453	3.16778	
Anxiety	Cvd	Yes	32	8.6875	4.94119	-1.004
		No	43	10.0465	6.78217	
	Cancer	Yes	23	6.8696	2.81723	-1.357
		No	52	8.0769	4.81764	
	Normals	Yes	22	7.1818	2.28111	-.098
		No	53	7.2453	3.09407	
Stress	Cvd	Yes	32	9.6875	3.52354	-1.834*
		No	43	11.3488	4.31434	
	Cancer	Yes	23	12.2609	5.19805	-.284
		No	52	12.6154	4.43760	
	Normals	Yes	22	14.1818	5.85244	-.216
		No	53	14.4906	5.11266	
Total psychological distress	Cvd	Yes	32	33.3125	9.44402	-2.253*
		No	43	38.6977	11.21974	
	Cancer	Yes	23	29.5652	7.50652	-.701
		No	52	30.8846	7.52943	
	Normals	Yes	22	29.6364	8.17980	.773
		No	53	28.1132	6.66120	

Table 1: ttest analysis of the scores obtained on the DASS by the two groups formed based on presence of an intimate friend among cardiovascular patients, cancer patients and normals
Note: the t value is statistically significant at 0.05 level*

The *t* values indicated that cvd patients categorized on the basis of presence of an intimate friend differed significantly in their level of stress and total psychological distress, while no significant differences were seen in their level of depression and anxiety. Cancer patients categorized on the basis of presence of an intimate friend showed no significant differences in their level of depression, anxiety, stress and total psychological distress. Normalscategorized on the basis of presence of an intimate friend differed significantly in their level of depression, while no significant differences were seen in their level of anxiety, stress and total psychological distress.
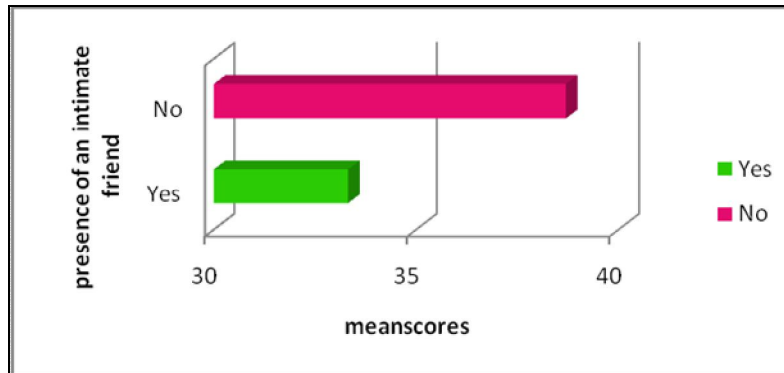
Mean scores obtained on the level of stress based on presence of intimate friend in cvd patients is presented in the Graph No.1.
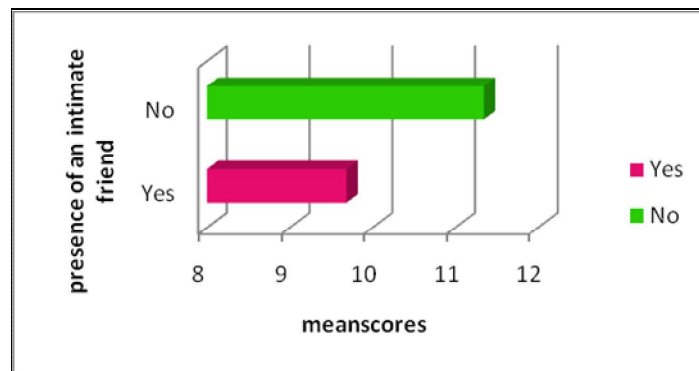
Graph 1: Differences in the level of stress based on presence of an intimatefriend in cvd patients

The mean scores indicated that cvd patients who have an intimate friend (9.6875) had significantly lower level of stress than those who do not have an intimate friend (11.3488).

Mean scores obtained on the level of total psychological distress based on presence of an intimate friend in cvd patients is presented in the Graph No. 2.

Graph 2: Differences in the level of total psychological distress based on presenceof an intimate friend in cvd patients
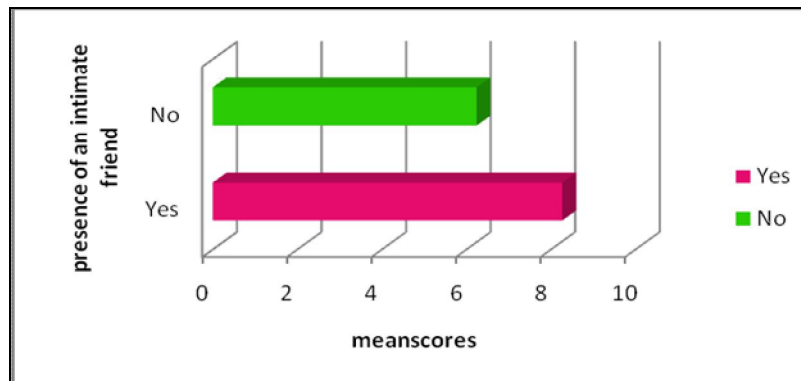
The mean scores indicated that cvd patients who have an intimate friend (33.3125) had significantly lower level of total psychological distress than who do not have an intimate friend (38.6977).

Cvd patients those who had an intimate friend have lower level of stress and total psychological distress than who do not have one. The results showed that the presence of an intimate friend was beneficial for them. Having a friend with whom they can share their good and bad gave them social and emotional support. The results suggested the importance of social support in coping with a chronic disease.

The following studies supported our findings:

Social support is associated with reduced cortisol responses to stress, which can have beneficial effects on a broad array of diseases, including heart disease and cancer (Turner – Cobb, Sephton, Koopman, Blake – Mortimer and Spiegal, 2000). The crucial factor for effective social support is having at least one close friend. Lonely people have poorer health and show more immune-compromise on certain indicators than do people who are not lonely.

Social support effectively reduces psychological distress, such as depression and anxiety, during times of stress. Social support alleviates psychological distress. Loneliness clearly leads to health risks in large part because lonely people appear to have more trouble sleeping and show more cardiovascular activation (Haines, Hurlbett and Beggs, 1996).Beverly Brummett et al., (2001) found that CAD patients who had only 1-3 people in their social networks were nearly two and half times more likely to die of CAD than patients with four or more close friends. Patients recovering from heart disease, as well as their spouses, often experience a variety of psychological reactions that include depression, anxiety, anger, fear, guilt and interpersonal conflict. Mean scores obtained on the level of depression based on presence of an intimate friend in normals is presented in the Graph No. 3

Graph 3: Differences in the level of depression based on presence of anintimate friend in normals

The mean scores indicated that normalswho do not have an intimate friend (6.2453) had significantly lower level of depression than who have an intimate friend (8.2727).

Among normals, those who had an intimate friend have higher level of depression than who does not have one. The reason can be because even though they have a friend, they don't get much get time to interact with their friends due to the hectic life style and so a close bond with them to understand their problems may not be possible.

4. Conclusion

Findings of the study emphasized the importance of social support for chronically ill patients. Recommendations and directions for future research include the importance of conceptualizing social support as a multidimensional construct in the incidence and prognosis of chronic illness especially cardiovascular disease and cancer.

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