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Commentary

Breast Implants, Self-Esteem, Quality of Life, and the Risk of Suicide

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Breast augmentation is the most common cosmetic surgery in the United States, with approximately 300,000 surgeries annually (American Society for Aesthetic Plastic Surgery, 2012). Many women seek breast augmentation to improve their lives, self-esteem, or relationships (Crerand, Infield, & Sarwer, 2007); however, numerous research reviews have concluded that suicide rates are higher for women with implants (Crerand et al., 2007; Lipworth & McLaughlin, 2010; McLaughlin, Lipworth, Murphy, & Walker, 2007; Rohrich, Adams, & Potter, 2007; Sansone & Sansone, 2007; Sarwer, Brown, & Evans, 2007). These studies raise a key question: Do implants increase the risk of suicide or do preexisting mental health problems increase the likelihood of undergoing breast implant surgery and also increase suicide risk?

Several researchers and plastic surgeons have suggested that implants are a symptom of depression, rather than a cause (Lipworth & McLaughlin, 2010; Rohrich et al., 2007; Sarwer et al., 2007) or that higher suicide rates were confounded by age, smoking, and marital status (Joiner, 2003; Spear & Heden, 2007), despite similar suicide rates when these factors were statistically controlled (Brinton, Lubin, Burich, Colton, & Hoover, 2001; Koot, Peeters, Granath, Grobbee, & Nyren, 2003; Pukkala et al., 2003). The authors that challenged the link between suicide and implants disclosed financial ties to breast implant manufacturers or cosmetic surgery. Although suggesting the need for better research, they did not cite relevant studies of women with implants that could help to explain the link to suicide.

This commentary is the first to synthesize information from the studies of suicide and breast implants with relevant studies measuring self-esteem, self-concept, mental health, and quality of life among women before and after getting breast implants. We sought to review what is known about the link between breast implants and suicide and identify credible hypotheses deserving of future study.

Updating and Examining the Data on Implants and Suicide

We systematically reviewed the published literature on suicide and breast implants, searching keywords in bibliographic databases (Embase, PubMed, PsycInfo, and Scopus) to capture English-language, peer-reviewed literature. Two authors (C.E.K. and M.T.) conducted full-text review of 52 articles; seven were based on original data, and five of these had been included in at least one previous literature review.

Suicide Trends

All seven studies (Table 1) found higher suicide rates among women with implants, whether compared with women of similar ages and races who underwent other plastic surgery (Brinton, Lubin, Murray, Colton, & Hoover, 2006; Jacobsen et al., 2004; Villeneuve et al., 2006); compared with women of the same age using national mortality statistics from the same countries (Sweden: Lipworth et al., 2007; Finland: Pukkala et al., 2003); in postmenopausal women with implants compared with those without implants (Rubin et al., 2010)[2]; or in mastectomy patients with implants compared with mastectomy patients without implants (Le et al., 2005). The ratio of observed-to-expected deaths (standardized mortality ratios) for cosmetic augmentation patients ranged from 1.6 to 3.2 in five studies with those comparisons.

Suicide rates were highest for the two studies not included in previous literature reviews. Our statistical analysis based on the Rubin et al. (2010) study found that postmenopausal women

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[2] Because no statistical analysis was done in original study, we conducted a Fisher's exact test.

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Table 1
Outcomes of Seven Studies Examining Breast Implants and Suicide

Author (year)	Study Objective	Reason for Surgery	Location	Study Design	Comparison Group	Follow-up Period	Outcome (suicide)
Brinton et al. (2006)	Examine mortality among women with breast implants	Cosmetic	North America (United States)	Mortality rates in 1) women with cosmetic breast implants ($n = 12,144$); 2) women with other plastic surgery ($n = 3,614$; via medical records and National Death Index database)	Women with other first plastic surgeries (nonbreast implants)	M = 20.5 years (for implants); M = 18.9 years (for control group)	Implant group: 29 suicides (0.24% of group), SMR = 1.63 (95% CI, 1.1–2.3); other plastic surgery group: 4 suicides (0.11% of group), SMR = 0.85 (95% CI, 0.3–2.3)
Jacobsen et al. (2004)	Examine mortality among Danish women with breast implants (also: examine the baseline prevalence of psychopathological disorders)	Cosmetic	Europe (Denmark)	Mortality rates in 1) women with cosmetic breast implants ($n = 2,761$); 2) women who had breast reduction surgery ($n = 7,071$); 3) women with other plastic surgery ($n = 1,736$; via Danish National Mortality Files)	2 groups: 1) women who had breast reduction surgery; 2) women with other plastic surgery	Overall mean = 11.5 years	Implant group: 14 suicides (0.51% of group), SMR = 3.1 (95% CI, 1.7–5.2); breast reduction group: 22 suicides (0.31% of group), SMR = 1.6 (95% CI, 1.0–2.5); other plastic surgery group: 0 suicides (0% of group), SMR = 0.0 (95% CI, 0.00–1.5)
Le et al. (2005)	Examine mortality of women with breast implants following mastectomy	Reconstruction after mastectomy	North America (United States)	Mortality rates in 1) breast reconstruction patients ($n = 1,018$); 2) breast cancer patients without reconstruction implants ($n = 3,950$; via Surveillance, Epidemiology and End Results Breast Implant Surveillance Study)	Women who had been diagnosed with breast cancer, had a mastectomy, but did not receive breast reconstruction implants	4–11 years since breast cancer diagnosis	Implant group: 3 suicides (0.29% of group); no implant group: 1 suicide (0.03% of group); implant group's suicide rate significantly higher than that of no implant group ($p = .02$)
Lipworth et al. (2007)	Examine mortality among Swedish women with breast implants	Cosmetic	Europe (Sweden)	Mortality rates in women with cosmetic breast implants ($n = 3,527$; via Swedish Inpatient Registry and official Swedish death statistics)	No comparison group (compared with the general female population's rates, using age and calendar year specific person-years)	M = 18.7 years (range, 0.1–37.8)	Implant group: 24 suicides (0.68% of group), SMR = 3.0 (95% CI, 1.9–4.5)
Pukkala et al. (2003)	Examine mortality among Finnish women with breast implants	Cosmetic	Europe (Finland)	Mortality rates in women with cosmetic breast implants ($n = 2,166$; via medical records and nationwide mortality database of Statistics Finland)	No comparison group (compared with the general female population's rates, using age and calendar year specific person-years)	M = 10.3 years	Implant group: 10 suicides (0.46% of group), SMR = 3.19 (95% CI, 1.53–5.86)
Rubin et al. (2010)	Examine the health outcomes, health behaviors, morbidity, and mortality of women with breast implants	Cosmetic	North America (United States)	Health outcomes, health behaviors, morbidity, and mortality rates in 1) women with cosmetic breast implants ($n = 1,257$); 2) women without breast implants ($n = 86,686$; via NIH's Women's Health Initiative study and annual follow-up surveys)	Women's Health Initiative participants without breast implants	Varied; for most, it had been 20–30 years from implant surgery to beginning of study	Implant group: 3 suicides (0.24% of group); no implant group: 20 suicides (0.02% of group); implant group's suicide rate significantly higher than that of the no implant group ($p < .01$)

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