



The Psychology of Friendship

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Friendship and Health

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Abstract and Keywords

Although many questions remain, theories and evidence suggest that there are multiple pathways by which friendship may influence physical health. This chapter first provides definition and measurement approaches most widely used in the study of friendship and physical health, and provides a historical overview of the study of relationships to health to provide a context in which to view the role of friendships. Then the chapter reviews the conceptual pathways by which friendship may influence physical health outcomes and existing interdisciplinary evidence of this association. Importantly, there is also evidence to suggest that friendship may have both a protective and potentially deleterious effects on physical health. This evidence is reviewed to identify factors that may serve as potential moderators. Finally, the chapter considers the potential influence of advancements in social technology advancements to highlight priorities for future research.

Keywords: friendship, physical, health, social, relationship, biomarker, behavior, physiological, process

Introduction

Friendship is unnecessary, like philosophy, like art... It has no survival value; rather it is one of those things that give value to survival.

—C. S. Lewis

Not only do close friendships give meaning to our lives and make us happier (Helliwell, Layard, & Sachs, 2013), but contrary to this statement by C.S. Lewis there is now substantial evidence that they have a powerful influence on

physical health and even survival. Indeed, both the quantity and quality of social relationships may influence physical health and risk for early mortality. Research evidence indicates that having fewer and lower-quality social relationships is associated with poorer physical health and greater risk for early mortality, while having more and better relationships is associated with better physical health and greater odds of survival (De Vogli, Chandola, & Marmot, 2007; Holt-Lunstad, Smith, & Layton, 2010; Uchino, 2006). Social relationships can take many forms that include both familial and nonfamilial relationships. Much of the early research on social relationships and physical health has been focused on familial or kin relationships, however, a significant amount of time is spent interacting among friends (Hartup & Stevens, 1999). This has led to an increased focus on *friendship* as an important component of one's social network and source of social support, which subsequently may have important implications for health.

The aims of this chapter are to (1) describe the multiple ways in which friendship has been defined and systematically studied; (2) review the historical and theoretical perspectives that may be applied to understanding the association between friendship and health; (3) provide an overview of the conceptual pathways by which friendships may influence health; (4) review the evidence that links friendship to better physical health outcomes; (5) address the potential detrimental influence of friends on health; and finally (6) address potential implications of changing trends in technology-mediated social interaction for understanding the association between friendship and health.

(p.234) Definition and Measurement Approaches

The terms “friendship,” “peer relationships,” and “social networks” are often used interchangeably but are distinct constructs. Friendship has been defined as a relationship based on mutual respect, appreciation, and liking (Bryan, Puckett, & Newman, 2013), whereas peer relationships are conceptualized as time spent with those of roughly the same age and maturity level. Although these may overlap, they are not necessarily the same construct given that peers may or may not be considered friends. Likewise, as will be discussed further later, the concept of “friendship” is evolving and broadening as Internet social networks advance.

Within the health literature, the influence of friendship has been measured in diverse ways—similar to the influence of social relationships more broadly. These can be broken down into two broad categories that examine the structure and functions of the relationship (Berkman, Glass, Brissette, & Seeman, 2000; Cohen & Wills, 1985; Uchino, 2006). Generally, these two approaches distinguish the aspects of social/friendship networks and the support that they provide.

Structural aspects of relationships refer to the extent to which individuals are situated or integrated into social networks. A *social network* describes connections between individuals and their relationships or network ties.

Measures of social networks typically assess the density, size, or number of

relationships. *Social integration* is used to describe the extent of participation of an individual in a broad range of social relationships, including active engagement in a variety of social activities or relationships, and a sense of communality and identification with one's social roles. *Functional social support* and corresponding measures focus on the specific functions served by friends, and are measured by actual or perceived availability of support, aid, or resources from these friendships. For example, friendship can be an important source of social support, which can include *emotional support* (e.g., expressions of care and concern), *informational support* (e.g., information or advice to help one cope with stress), *tangible support* (e.g., direct material aid, also referred to as instrumental, practical, or financial support), and *belonging support* (e.g., others to engage in social activities; Cohen, Mermelstein, Kamarck, & Hoberman, 1985; Cutrona & Russell, 1990). These functions also can be differentiated in terms of whether social support is perceived or received (Dunkel-Schetter & Skokan, 1990). Perceived support refers to the perception that support is available and will be provided if needed, whereas received support refers to the actual support provided by others. Importantly, received and perceived support are only moderately correlated and thus should be viewed as distinct constructs (Wills & Shiner, 2000). Thus, the influence of friendships on physical health is generally evaluated in terms of (1) the extent of integration in social networks, (2) the quality of social interactions that are intended to be supportive (e.g., received social support), and (3) the beliefs and perceptions of support availability held by individuals (e.g., perceived social support).

(p.235) Historical and Theoretical Perspectives

Although friendship has been systematically examined for over a century (Monroe, 1898), the majority of these studies focus on friendship in childhood and adolescence, with less known about friendship in older adulthood—a time when developmental processes may be most likely to manifest in physical health outcomes. Moreover, much of the research has focused on friendship as a relationship process, relationship outcomes, and psychological outcomes, with less attention paid to friendship in the context of physical health outcomes.

To understand how friendship might influence health, it may be useful to place it into the broader context of major theoretical models that have been used to guide research on close relationships and health. Although there are many theoretical models that have been proposed, the social network theory and social support theory are highlighted, because these are closely relevant to how friendship may influence health, as friends are likely a substantial portion of one's social network and source of social support.

Social Network Theory

The term “social network” has been attributed to the sociologist Barnes (1954), as well as the anthropologists Bott (1957) and Mitchell (1969). Social network theory describes the individual as a node and the relationships to others within

the network as ties. A social network then may be illustrated as a network of individuals connected by ties. The social network perspective puts greater emphasis on the relationship between ties within the network than on the individual. These networks are thought to have an influencing pressure on individuals' attitudes and behaviors, which in turn may influence health. Thus, social network analysis is a systematic way of detecting the magnitude of these pressures. Social network theory has been applied across many disciplines to examine the relationships between individuals, family, and groups. In an effort to understand the association between social networks and health, social networks are often examined in epidemiological studies, as well as to model health education, disease prevention, spread, and treatment, in addition to healthcare structure and coordination. More recent conceptualizations of social networks (Berkman et al., 2000) further argue that networks operate through four primary pathways: (1) provision of social support; (2) social influence; (3) social engagement and attachment; and (4) access to resources and material goods.

Social Support

Two influential reviews were published in 1976 that emphasized the health relevance of the qualitative aspects (e.g., functional support) that social networks might provide. These two reviews highlighted the important role that social support might play on physical health outcomes. Social support was defined as information from **(p.236)** others that one is cared for, loved, esteemed, and part of a mutually supportive network (Cobb, 1976). The review by Cobb presented evidence suggesting that these social support resources were important in managing stressful life events such as pregnancy, hospitalization, and bereavement. Cassell focused more on the biological processes linking support to health (Cassel, 1976). After reviewing studies suggesting that social support may modify health-relevant bodily processes (e.g., blood pressure, endocrine activity), Cassell argued that social support should be viewed as a protective factor. Together Cassell and Cobb conclude that social support is protective from the potentially pathogenic effects of stress.

Conceptual Pathways by Which Friends Influence Health

The influence of social relationships on physical health has been examined across a number of different disciplines including psychology, medicine, epidemiology, sociology, anthropology, and public health. From this interdisciplinary perspective multiple pathways have been identified by which friends may influence physical health outcomes. General theoretical models have emerged from this work suggesting that friendships and their associated social support may be health-promoting by influencing both psychological and behavioral processes (Uchino, 2006). For instance, friends may be important sources of social support and thereby influence psychological pathways (e.g., stress appraisal) as well as behavioral pathways (e.g., health behavior change). These pathways are thought to influence health-relevant biological pathways that ultimately influence the development or progression of physical health

outcomes. Friendships may also have a direct influence on health-relevant biological outcomes (e.g., blood pressure) that may lead to clinical disease end points such as hypertension.

The Stress-Buffering Model

The most well-known stress-related theoretical model is the stress-buffering model of support (Cohen & Wills, 1985). This model is based on the hypothesis that stressors have an adverse influence on health behaviors and physical health outcomes but that social support can help “buffer” or minimize the negative health effects of stress. This stress-buffering occurs through a cognitive appraisal process (interpretation of the situation and our coping resources) that can in turn weaken or “buffer” the normally robust association between stress and health-related outcomes (Cohen, 1988).

The Matching Hypothesis

The matching hypothesis, a variation on the stress-buffering model, predicts that the stress-buffering of social support is most effective when there is a match between the **(p.237)** type of support provided and the needs arising from the stressful event (Cutrona & Russell, 1990). More specifically, it predicts that emotional and belonging support should be most effective for uncontrollable events (e.g., job layoff), whereas informational and tangible support should be most effective for controllable events (e.g., preparing for a job interview; Cutrona & Russell, 1990). Importantly, this is one of the few theoretical models that highlights how different functional components of social support might be related to different outcomes based on the characteristics/type of the stressor (e.g., controllability).

The Direct Effect Model

This model postulates that social support is effective more generally regardless of stress levels (Cohen & Wills, 1985). In their review, Cohen and Wills found that structural measures of support were more likely to demonstrate direct effects. The direct effect of structural measures was seen as representing direct (e.g., encouragement to behave more healthily) or indirect (e.g., greater life meaning from relationships leads to better self-care and less risk taking) social control processes (Umberson, 1987). However, there is now evidence that functional support can also have direct effects on health by increasing a sense of connection, self-esteem, and control over life due to knowing that you are cared for and supported by others (Lakey & Orehek, 2011; Thoits, 2011).

Relational Regulation Theory

Relational regulation theory (RRT) was proposed as an extension to account for direct effects of social support on mental health outcomes. According to RRT, everyday interactions with another person (e.g., chatting about the events of your day, gossip, sports talk) regulate an individual on a daily basis, which may result in positive outcomes such as general comfort with that person and a sense

of well-being (Lakey & Orehek, 2011). Because relationship representations may generalize to stressful contexts, daily interactions may serve as the basis for stress-buffering or prevention. Indeed, researchers have been able to predict which relationships might be most beneficial months later based on analyses of brief 10-minute laboratory-based discussions (Veenstra et al., 2011).

Social Capitalization Theory

This is one of the few perspectives that does not focus on the benefits of support during stressful times but rather suggests that friendship may be beneficial via positive experiences. While friends can be an important source of support during stressful times, when something positive or exciting happens we also want to share it with a friend. More specifically, this theory suggests that by sharing positive events with a friend we experience even greater benefits (or *capitalization*) than the benefit of experience itself (Gable, Reis, Impett, & Asher, 2004). **(p.238)** Sharing positive experiences with a supportive and responsive friend has been shown to influence positive affect, happiness, and personal and relationship well-being (Lambert et al., 2013). The responsiveness of support received from friends during positive events also provides critical information as to the availability of the source during times of stress (Gable, Gosnell, Maisel, & Strachman, 2012). While less research has linked social capitalization to physical health outcomes, other research has linked such affective states and relationship well-being to health processes (Dockray & Steptoe, 2010; Stellar et al., 2015), making this a potentially promising line of research.

Friendship and Physical Health Outcomes

Does friendship have a significant influence on physical health, or does one's physical health influence friendships? There is data to suggest the association between friendship and health may be bidirectional, such that friendship can influence health and health can influence friendship (Bryan et al., 2013). Importantly, however, there exists strong epidemiological evidence of a directional effect of relationships on health (Holt-Lunstad et al., 2010). Thus, the majority of this chapter focuses on the directional effect of friendship on physical health. Likewise, the influence that friendships may have on physical health may be either positive or negative. While being socially connected can be protective, friendships may also have a deleterious effect on health via encouraging unhealthy and risky behaviors and/or by serving as sources of stress.

Effects of Health on Friendship

There is evidence to suggest that health factors (e.g., smoking status, BMI, muscularity, depression, etc.) can influence the development, maintenance, and dissolution of friendships (O'Malley & Christakis, 2011). Adolescents in poor health are also more likely to form smaller social networks and occupy less prominence within their networks than their healthy peers (Haas, Schaefer, & Kornienko, 2010). However, in a review of youth with chronic pediatric

conditions, evidence suggests that children and adolescents with chronic health conditions such as cancer, asthma, and diabetes generally do not have more problems with peer relations than do their healthy counterparts (La Greca, Bearman, & Moore, 2002). Moreover, this review found that friends often facilitated adaptation to their health condition. However, those with more stigmatizing conditions (e.g., HIV) and conditions of the central nervous system (CNS; e.g., cerebral palsy) were more likely to encounter social difficulties. Thus, it appears that the nature of the health condition may play an important role in whether it may impact friendships and peer relations.

(p.239) Effects of Friendship on Health

Overall, there is strong evidence for the protective effect of social relationships on health, with stronger evidence for perceived support than received support (see review by Uchino, 2009). This evidence comes from laboratory, field, and epidemiological studies across morbidity and mortality outcomes. Most studies measure perceptions of social support in a broad way that includes perceptions of support from friends, family, and acquaintances; however, the majority of these studies do not break down results by relationship type. Thus, results include the effects of friendships, but few studies isolate the effects of friendship specifically. Evidence for effects of friendship on health behaviors, self-reported health and symptomatology, clinical health outcomes, and overall mortality are briefly highlighted in this section.

Health Behaviors

In both youth and adults, friends and peers have a significant influence on the development and maintenance of positive and negative health habits. Friends may influence health by encouraging, modeling, or promoting norms of healthy behaviors (e.g., physical activity, fruit and vegetable consumption, adequate sleep) and deterring risky behaviors (e.g., smoking, binge drinking, drug use, risky sexual behaviors). For instance, even among adults, data shows that peers influence fruit and vegetable consumption (Buller et al., 1999). In older adult women, support from a friend was the most successful in predicting physical activity across the life span (Harvey & Alexander, 2012). Many health behaviors tend to also cluster together such that they co-occur (e.g., alcohol and substance abuse, nutrition and physical activity). One study found that descriptive norms of friends were associated with multiple behavior clusters (Dusseldorp et al., 2014). Thus, not only might friends influence health habits, but, given that these habits tend to cluster, this influence may be compounded.

Friends can also be sources of information relevant to health behaviors. For example, in a recent study of a random sample of 915 adolescents, participants completed an anonymous questionnaire that asked about their preferred source of health information (Baheiraei, Khoori, Froushani, Ahmadi, & Ybarra, 2014). Results of this study indicated that the preferred source of this information was their mothers (51.11%) and same-sex friends (40.11%), with older adolescents

preferring friends. In another study, older women were asked whom they were closest to and how they contributed to their health (Moremen, 2008). When it came to direct caregiving, most preferred family members to friends; however, some felt they would also call on their friends. Women described the ways in which confidants kept them healthy, which included “(1) offering advice and encouragement about diet and exercise, (2) providing meals and transportation, (3) laughing, talking, and joking with them, (4) keeping them happy and feeling good about themselves, and, on rare occasions, (5) offering spiritual guidance” (Moremen, 2008, p. 160).

(p.240) Self-Reported Health and Symptomology

The majority of studies that examine the health influence of friendship specifically measure self-reported health. A longitudinal study among a Scottish cohort found that the number of friends in childhood predicted self-rated health in adulthood (Almquist, 2012). There were gender differences in this association, such that for women it was a gradient effect (the fewer the number of friends the worse the health) whereas for men it was more of a threshold effect (only those without friends showed poorer health). In a national survey study of older adults, older people who had a close companion friend in the place where they worship had higher self-reported health and with fewer outpatient physician visits over time; however, these findings only held for the oldest-old study participants (Krause, 2010). This also appears to be consistent among adolescents. Examining the friendship data from the National Longitudinal Study of Adolescent Health, results show that having a larger number of friends improves physical and mental health (Ho, 2014). Specifically, each additional friend increases an individual’s general health measure by 6.6%. Taken together these data suggest that the number of friends one has, across childhood, adolescence, adulthood, and old age, is beneficial to physical health.

Social support has been shown across a number of studies to buffer the negative effects of stress, but there may be some utility to support from friends specifically. For example, one study found that having a friend to confide in played a moderating role in the negative health effects associated with losing a spouse (widowhood, divorce, separation; Bookwala, Marshall, & Manning, 2014). This study found that those who had a friend as a confidante reported lower somatic depressive symptoms, better self-rated health, and fewer sick days in bed during the preceding year than those who reported not having a friend as confidante.

Clinical Health Outcomes

There is substantial evidence linking social support to coronary heart disease (CHD), the leading cause of death in most industrialized countries. For example, in a prospective study examining perceived social support from family, friends, acquaintances, and significant others on mortality or recurrent event, found that perceived social support was associated with better recovery among patients

with a recent acute myocardial infarction (Lett et al., 2007). Further, a 2010 systematic review and meta-analysis examined prospective studies that measured both structural and functional social support and cardiovascular outcomes at follow-up. These included studies of CHD etiology, development of CHD in previously healthy individuals, and CHD prognosis, which includes individuals with preexisting CHD (Barth, Schneider, & von Kanel, 2010). Across multiple studies, there is evidence for the beneficial effect of functional support. Perceived social support, or the perception of positive social resources, is important in CHD prognosis.

(p.241) Another clinical outcome that is gaining interest is oral health, given that periodontal disease is also significantly associated with heart disease (Lockhart et al., 2012). In an intriguing study of oral health, various aspects of social relationships, including number of close friends, were examined to see whether these were associated with clinical measures of current disease, markers of good oral function, and subjective oral health (Tsakos et al., 2013). They found that those with four to six close friends had fewer decayed teeth and lower probability for root decay than those with fewer friends.

Mortality

There is now substantial evidence for the protective effect of being socially connected on risk for mortality from all causes. Some of the first epidemiological evidence was highlighted in an influential review of five prospective studies (House, Landis, & Umberson, 1988). Since that time, the number of studies examining the influence of social relationships (both functional and structural aspects) and mortality has grown exponentially. In a meta-analysis of 148 independent prospective studies, results indicate that individuals with greater social connections (averaged across the different measurement approaches) have a 50% greater likelihood of survival compared with those low in social connections (Holt-Lunstad et al., 2010). The effect was consistent across gender, age, initial health status, and causes of mortality.

There is now evidence of the directional effect of relationships' influence on mortality (Holt-Lunstad et al., 2010). Most studies tracked initially healthy participants; however, regardless of initial health status, those who were more socially connected lived longer. Most notably, the overall magnitude of the effect on risk for mortality was comparable with and in many cases exceeded the effect of many well-established risk factors for mortality. For instance, lacking social connectedness carries a risk equivalent to smoking up to 15 cigarettes per day, and is greater than alcohol abuse, physical inactivity (sedentary lifestyle), obesity, and air pollution, among others.

The studies included in the meta-analytic review measured the influence of social relationships in diverse ways, including both functional (received support, perceived social support, and perceived loneliness) and structural aspects

(marital status, social networks, social integration, complex measures of social integrations, living alone, social isolation). With the exception of marital status and perhaps living alone, each of these measurement approaches likely included the influence of friends. Assessments that took into account the multidimensional aspects of social relationships were associated with a 91% increased odds of survival. Such measures account for a diversity of relationships. Likewise, other research suggests that having a diversity (not just a large number) of relationships was associated with better immune functioning (Cohen, Doyle, Skoner, Rabin, & Gwaltney, 1997) and even **(p.242)** white matter microstructural integrity in the brain (Molesworth, Sheu, Cohen, Gianaros, & Verstynen, 2015). Together, these data suggest that perhaps different relationships serve different functions and thus access to diversity would be adaptive. Further, these data suggest that both friendship networks and the social support they provide are important.

Potentially Deleterious Health Effects of Friendship

While friends can exert a positive influence on health behaviors, evidence shows that friends can also exert a powerful negative influence as well.

Unhealthy Behaviors

A unique approach to understanding the role of friendship on health behaviors comes from the work of Christakis and Fowler on *social contagion*. They review a series of studies that show the spread of various health indicators within social networks (Christakis & Fowler, 2013). For example, one's chances of becoming obese increased by 57% if he or she had a friend who became obese within a given time frame (Christakis & Fowler, 2007). Evidence from large datasets demonstrates the significant influence of social networks on alcohol consumption (Rosenquist, Murabito, Fowler, & Christakis, 2010), smoking (Christakis & Fowler, 2008), aspirin use and cardiac events (Strully et al., 2012), depression (Rosenquist, Fowler, & Christakis, 2011), and sleep loss and drug use in adolescents (Mednick, Christakis, & Fowler, 2010). They further argue that formation of friendships, relationships that are neither kin nor mate, tend to be formed with genetically similar others (Christakis & Fowler, 2014; Fowler, Settle, & Christakis, 2011).

Sources of Stress

Friends can be rich sources of social support that can help us in times of stress, but friendships can also be sources of stress themselves. Much of the research has focused primarily on positive relationships, however many friendships are characterized by both positivity and negativity (Campo et al., 2009; Uchino, Holt-Lunstad, Uno, & Flinders, 2001). The assumption that friendships are solely supportive has overgeneralized many individuals' experiences—yet data shows that roughly half of people's friendship networks are made up of ambivalent relationships (Bushman & Holt-Lunstad, 2009; Holt-Lunstad & Clark, 2014).

Several studies have examined the influence of interacting with an ambivalent friend relative to a supportive friend on cardiovascular reactivity (Gramer & Supp, 2014; Holt-Lunstad & Clark, 2014; Holt-Lunstad, Uchino, Smith, & Hicks, 2007; Uno, Uchino, & Smith, 2002). In these studies, participants were asked to bring in a friend to the lab as part of the study. Results from these studies have demonstrated greater cardiovascular reactivity when interacting with an ambivalent friend (**p.243**) compared with a supportive friend. Several other studies using other research designs have shown consistent findings. This finding is consistent whether the target (ambivalent relationship) is physically present or not (Carlisle et al., 2012), whether one is interacting with an experimentally manipulated or existing relationship, and whether the effect is examined at the relationship level (examining a specific relationship dyad; Holt-Lunstad et al., 2007) or network level (number of ambivalent relationships in one's network; Uchino et al., 2001). Greater cardiovascular reactivity associated with ambivalent relationships was also seen across multiple types of laboratory tasks; and when examining young adult (mostly undergraduate) as well as middle to older adult samples (Uchino, Holt-Lunstad, Bloor, & Campo, 2005). Taken together, the evidence suggests a generalized negative influence of ambivalent relationships on acute cardiovascular functioning in a laboratory setting. These studies suggest that ambivalent relationships are linked to deleterious health-relevant processes. Importantly, there is also evidence to suggest that these effects may be chronic. Ambivalent friendships occupy roughly half of one's social network, involve a similar level of contact as supportive friends, and are maintained over the long term, suggesting that the influence of these relationships may not be isolated but rather may potentially have a pervasive impact (Bushman & Holt-Lunstad, 2009).

Looking to the Future

Recent advancements in technology have led to dramatic shifts in the way in which we interact socially and the way in which social support is communicated. The use of the Internet and mobile technology is widespread, even in developing and emerging nations (Pew Research, 2015), and is now the primary form of communication. Recent developments in technology are even changing the way in which many define what is considered a friend (see Ledbetter, chapter 6, this volume). For example, many do not consider a friend on Facebook to be true a friend. Technology is already currently involved in and influencing the development, maintenance, and even termination of friendships, and new developments (e.g., intelligent machines, wearable devices, immersive environments, etc.) are happening at an exponentially rapid pace. The long-term consequences of these developments are yet unknown.

This raises an important question of whether friendship online has similar health effects as off-line friendships. Research is now exploring both equivalencies between technology-mediated and face-to-face communication, as well as the potential unique benefits of each approach to social support. There is some

evidence to suggest that participation in a broader social network available online can promote well-being and provide a buffering effect during times of stress (Dutta-Bergman, 2004). For example, one study found that the number of Facebook friends was associated with stronger perceptions of social support, which was associated with **(p.244)** reduced stress, and in turn less self-reported physical illness and greater well-being (Nabi, Prestin, & So, 2013). In an experimental study where subjects were randomly assigned to increase frequency of Facebook posts, results revealed experimentally induced reductions in loneliness relative to the control group and that these reductions in loneliness were due to increased feelings of connection to friends on a daily basis (Deters & Mehl, 2013). However, other studies point to potential pitfalls (Luxton, June, & Fairall, 2012; Steers, Wickham, & Acitelli, 2014). For instance, presence of a mobile phone in social settings may reduce closeness and quality of interactions interfering with social support (Przybylski & Weinstein, 2013). Likewise, usage of social media has been linked to greater depressive symptomology (Steers et al., 2014) and even suicide-related behavior (Luxton et al., 2012). Thus, we need to acknowledge and better understand both the positive and negative health implications associated with social technology.

Conclusion

Friendship is an important and significant part of our daily social experience that has widespread implications for our health and well-being. There is currently a large and growing literature on the significant influence our social relationships have on physical health; however, relatively less is known about friendship specifically. While much is known about social networks and the social support associated with them, few studies specify the specific nature of the relationship type (e.g., friend, spouse, family, coworker, parent-child, etc.). Undoubtedly, friendships are a part of our social networks and are a frequent source of social support—both of which have been robustly linked to physical health outcomes. Further, meta-analytic data on mortality found the greatest effect among studies that used multidimensional measures of social integration—it was associated with a 91% increased odds of survival. Such measures account for a diversity of relationships (e.g., spouse, children, parents, other relatives, close friends, community involvement, coworkers, neighbors, etc.), suggesting that perhaps different relationships serve different functions and thus access to diversity would be adaptive. Given recent trends suggesting technology-mediated communication is now the dominant form of social interaction, friends may occupy a greater prominence among interaction partners via social technology. Importantly, while research suggests that friends and friendship networks may have a powerful influence on health, this influence may be positive or negative. Although more data is needed, it is possible that social technology may accelerate and accentuate this influence. Additionally, a life span perspective is needed to take into account distinct antecedent processes and mechanisms that are relevant to different sources of support over

time (Uchino, 2009). Finally, because friendship is unique in being a voluntary/optional relationship, further research is needed to determine the potential particular pathways by which friendships influence health.

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