Your best interests at heart?

Aoife O'Donovan *and* **Brian M. Hughes** *find that the effects of social support on health aren't as straightforward as they at first seem.*

'I'M afraid you're suffering from a lack of social support,' said the physician in a grave tone. 'Consequences of this malady include heart disease, complications during pregnancy and childbirth, a whole host of infectious diseases, as well as higher blood-pressure and heart-rate reactivity to acute stress. I have scheduled you for a course of socially supportive interactions, which will begin immediately. These interventions will take place during acutely stressful events in your life, such as traffic jams and work situations, and will serve to reduce your blood-pressure and heart-rate reactivity at these times.'

The above exchange is unlikely to be heard in many contemporary, biomedically focused healthcare settings. But a body of epidemiological, experimental and intervention research has highlighted the positive impact of social support on cardiovascular health. Does this state of affairs reflect a worrying disconnection between medical practice and the latest psychological research? Or is it simply the case that we psychologists have been premature in promoting the benefits of social support for the cardiovascular system?

The concept of social support

Psychologists have long examined the impact of social relationships from a variety of theoretical perspectives, including social exchange theory, social comparison theory, evolutionary theory, attribution theory, and psychodynamic theory. However, by far the most empirical work has taken place within the domain of coping theory, particularly as represented by Lazarus's transactional model of stress (1975). According to this model, a stress response is elicited when an individual appraises that they do not have sufficient resources to cope with a given situation. One such coping resource is social support. The suggestion that social support exerts a beneficial effect by influencing the individual's appraisals of potential stressors and coping resources is known as the 'stress-buffering hypothesis' of social support (Cohen & Wills, 1985). This compares with the 'direct effects hypothesis', which purports that all social support is good, regardless of the individual's perception of stress in the environment (Barrera, 1986). Whichever theory is favoured, however, the coping perspective requires that a variable called 'social support' can be constructed and measured.

However, neither a universally accepted definition, nor a coherent, widely applied measurement approach exists. Taylor (2003) summarised past attempts at defining social support as follows:

> *information from others that one is loved and cared for, esteemed and valued, and part of a network of communication and mutual obligations from parents, a spouse or lover, other relatives, friends, social and community contacts such as clubs, or even a devoted pet.* (p.235)

Even this reasonably comprehensive description fails to encompass all aspects of the social support construct that have been examined to date. For example, many authors have proposed taxonomies of social support types. House (1981) distinguished different functions of support: emotional, instrumental, informational and appraisal. Sarason *et al.* (1990) separated tangible, informational and emotional support. Importantly, Sarason *et al*. suggested that it is the perception that support is generally available, whatever its specific nature or function, that affects personal working models of social support, and presumably, health and other outcomes.

Other authors (e.g. Tardy, 1985) have recommended that a useful distinction can be drawn between 'available' support and 'enacted' support, highlighting the potential for perceived availability of support to be just as effective as support that has already been received.

The impact of social support

In spite of the absence of a consensual or consistently applied definition of social support, a body of research spanning two decades has nonetheless documented a robust association between constructs related to social support and better physical health. Strong epidemiological evidence links social support to lower risk for all-cause morbidity and mortality (House *et al.*, 1988). Particularly strong evidence supports a link between high social support and lower coronary heart disease rates. Social support is inversely related to cardiovascular morbidity (Cohen, 1988) and mortality (Orth-Gomer, 1994).

However, population-based surveys have failed to clarify important questions concerning causation and causal direction in the relationship between social support and health. In other words, epidemiological research does not shed light on whether social support enhances health, or whether people with better health simply attract more social contacts. Such uncertainties have been particularly influential in

WEBLINKS

Workplace social support and cardiovascular disease: *www.workhealth.org/risk/rfss.html*

Laboratory for the Study of Stress, Immunity and Disease: *www.psy.cmu.edu/~scohen/*

Information on cardiovascular reactivity: *www.macses.ucsf.edu/Research/Psychosocial/notebook/reactivity.html*

Publications from the Whitehall II study: *www.workhealth.org/projects/pwhitepub.html*

stimulating the development of experimental methods for analysing the effects of social support on health parameters.

Social support and stress in the laboratory

One common way of studying the effects of social support on stress responses involves examining the effects of social support on cardiovascular reactivity (CVR) to psychological stress in the laboratory. This approach is based on a theory known as the 'reactivity hypothesis', which proposes that excessive cardiovascular response to episodic stress contributes to the development of hypertension and coronary heart disease (Krantz & Manuck, 1984). People with high levels of CVR are believed to be at increased lifetime risk of of developing high blood pressure and heart disease (Lovallo & Gerin, 2003).

In the majority of social-support studies, CVR is measured by recording blood pressure and heart rate. CVR is relatively stable over time (Sherwood *et al.*, 1997) and, as with other physiological measures, is less contaminated by social desirability factors than psychometrically assessed dependent variables such as questionnaire measures of stress and anxiety. The ability to measure and interpret such a variable generates an attractive context for researchers to examine the impact of social support in controlled laboratory settings. Recent social-support research employing CVR as a dependent variable displays much experimental sophistication and has yielded some useful empirical evidence that has the potential to guide the design of socially supportive interventions.

Two main approaches have been adopted in research examining the support–CVR relationship: the study of the effects of laboratory analogues of social support on CVR, and the study of the relationship between psychometrically evaluated quantity and quality of day-to-day (outside the laboratory) support and CVR.

Laboratory social support and CVR

Studies of the effects of laboratory social support on CVR have employed slight variations on the following protocol. First, participants rest quietly while baseline measures of blood pressure and heart rate are taken. Then, participants complete some stressful laboratory task, such as speech-giving or mental arithmetic, either alone or in varying social support conditions, and their CVR is recorded. Operationalisations of laboratory social support have included mere presence, verbal praise, offers of information, and even videotapes of people behaving in a supportive manner. In general, studies employing this protocol have reported an attenuating effect for social support on CVR (e.g. Kamarck *et al*., 1990). However, some researchers have actually found higher reactivity in support conditions (e.g. Allen *et al.*, 1991).

Do all types of support have the same effects, so that simply trying to help is enough? Or do we need to be careful to match the support we give to the problem at hand? It is likely that different types of support are differentially effective for different types of problems (Mitchell *et al.*, 1982). For example, if the support that is needed in a given situation is mere presence, then friends and family may be only as effective as strangers. If instrumental support is necessary, then an expert who is a stranger might be more effective. However, due to the use of different stressors, varied populations and disparate methodologies across laboratory social-support studies it it difficult to draw conclusions about which types of support are most effective at attenuating CVR in the laboratory.

A major methodological issue in laboratory social-support research concerns the identity of the support provider. Studies of the effects of laboratory social support on CVR have used either friends of the participants, or else confederates employed by the researcher, to provide support in the experiment. Studies employing friends of participants as supporters have generally indicated an attenuating effect for support on CVR (e.g. Kamarck *et al.*, 1995). However, Allen *et al*. (1991) reported that reactivity in the presence of a friend was higher than reactivity when alone. This higher reactivity in the presence of a friend may be attributable to anxiety about being evaluated by the other person, commonly referred to as 'evaluation apprehension' (Thorsteinsson & James, 1999).

On the one hand, friend support is likely to mirror support received by people in their everyday lives; but on the other hand, there are standardisation problems when employing friends as support providers in experimental research, even when they are trained to formalise their behaviour while in the laboratory. In most instances, friend supporters have been recruited by asking participants to bring along their same-sex best friend. It is possible that people who have a friend available to come with them to the laboratory differ from people who do not have such a friend available, and this might account for some between-group differences.

As a result of such problems, many investigators have sacrificed some external validity for greater experimental control. These researchers have employed trained confederates to provide standardised support to participants. Some of this research indicates an attenuating effect for confederate support on CVR (e.g. Kamarck *et al*., 1990) but there have been exceptions (e.g. Edens *et al*., 1992). Furthermore, despite the fact that these confederates are

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Social support can include family, friends or even devoted pets

trained to provide equivalent support across all participants, it remains likely that there will be some slight differences in their behaviour across participants. One group of researchers has attempted to overcome this problem by operationalising social support as a pre-recorded video of either a supportive or non-supportive confederate (Thorsteinsson *et al.*, 1998). These researchers found a significant attenuating effect for social support on heart rate.

In a further interesting development, a team of researchers attempted to study social support processes by focusing on availability of social support rather than on enacted social support (Uchino & Garvey, 1997). The researchers instructed participants either that support was available or that support was not available while they were to perform a speech task. Even though the setting and procedure were the same for all participants, both heart-rate and blood-pressure reactions were observed to be reduced when participants were led to believe that support would have been available if needed. Of course, such research needs to be replicated before definitive conclusions can be drawn.

The picture is further complicated by the suggestion that a number of behavioural and personality factors influence the relationship between support and CVR. As well as evaluation apprehension, such potentially moderating variables might include hostility, self-efficacy, neuroticism and optimism, all of which appear to be associated with blood pressure. The difficulty for researchers is that the list of such variables is potentially endless, and some of them (for example, evaluation apprehension) might be impossible for researchers to eliminate. Given the predictions of social comparison theories, the importance of evaluation apprehension is potentially great, and this variable warrants much more attention in research.

KIEREN PHELPS

But does the research really mean anything? Can laboratory analogues of stressful situations adequately represent the complex set of behaviours, thoughts and emotions that people experience in their everyday lives? Davig *et al.* (2000) report that CVR associated with a laboratory speech task was not the best predictor of CVR to a natural speech task in their study (an oral defence of a thesis or dissertation). In fact, CVR while watching a frightening movie was a better predictor of CVR during the oral exam. This study had a very small sample, however, and as psychologists working in stress research, we need to focus on maximising the validity of laboratory analogues of stress.

Psychometric social support and CVR As previously mentioned, epidemiological research has implicated social support in the aetiology of coronary heart disease. These epidemiological studies were based not on laboratory manipulations of social support, but on sociological constructions that represent the individual's relationship with the social network that has evolved around them in real life (Hughes, 2002). For that reason, studies that employ psychometric social support as an independent variable may offer findings that are more generalisable than those from laboratory social support and CVR studies.

The experimental protocol employed in studies examining the effects of psychometric social support on CVR is similar to that used in laboratory social support studies. Participants perform some laboratory task, which is designed to elicit a cardiovascular response. Blood-pressure and heart-rate measures are generally recorded and participants also complete questionnaires that assess social support. Empirical evidence indicates that psychometric social support is an individual difference variable, which is stable over time (Sarason *et al.*, 1986). In the majority of such studies, the Social Support Questionnaire 6 (SSQ6: Sarason *et al.*, 1983) has been employed as a psychometric social support measure. The SSQ6 yields scores for both quantity and quality of psychometric social support (alternative questionnaires tend to measure one or the other). Conceptually and empirically, it is important to distinguish between these two facets of social support. A person who reports having many friends may not be satisfied in their relationships

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DISCUSS AND DEBATE

Should social support be systematically incorporated into routine treatment programmes for cardiac and other patient groups?

What are the negative effects of social support?

Which aspects of social support are beneficial to physical health, and which aspects are detrimental to physical health?

Can we ever provide valid analogues of everyday social interactions in the controlled laboratory setting?

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and indeed may not be in receipt of positive or usable forms of support from them.

Despite offering an alternative perspective, the output of social support and CVR research measuring social support psychometrically has been low. The results of the five psychometric support and CVR studies that have been conducted indicate no association between quality of social support and reactivity. However, quantity tends to be positively related with CVR. In other words, participants reporting higher levels of psychometric social support show higher reactivity to laboratory stressors (e.g. Hughes & Curtis, 2000; Roy *et al*., 1998). This positive association between quantity of support and blood-pressure responses to stress does not sit well with the epidemiological findings. However, this paradox may result from conceptual issues related to the definition of social support employed across the different types of research.

One issue highlighted by research indicating negative effects of psychometric social support on CVR is that our social relationships can have negative, as well as positive, effects. Social exchange theorists have long emphasised that social ties can have both negative and positive consequences (e.g. Homans, 1974). We may receive instrumental support in crises, emotional support for the ups and downs of daily living and chances to appraise one's situation relative to that of others in ways that are beneficial for the self. But friendships can also cause conflict, embarrassment, envy, invasion of privacy and negative appraisals of one's own life situation relative to the life situation of others. Furthermore, having a greater number of people in one's social network increases the probability that one will have friends and family members who become ill or die. Therefore, reports of high quantities of social support (particularly with low ratings of support quality) may well indicate, rather than attenuate, an increased potential for life stress. Further research is required to clarify this milieu.

Heartache and headaches

The emphasis on prevention in some recent healthcare initiatives suggests that the establishment of risk factors for disease, and the design of interventions (whether pharmacological or otherwise) to reduce the prevalence of such risk factors is an important task. Lack of social support, as we have noted, may be one such risk factor.

We have considered above the effects of social support on blood-pressure and heart-rate reactivity to acute laboratory stress, one aspect of the wider relationship between support and physical well-being. Although much of this research is imaginative and its findings enlightening, our understanding of the relationship between social support and CVR remains far from straightforward. This shouldn't really surprise us: when it comes to aching hearts, friendship and love are notoriously double-edged swords! It appears that those who wish to do good – either paid professionals or just good friends – need to tread carefully when offering social support in acutely stressful situations.

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