Volume 1

# The Process and Outcome of an

# On-Line Mutual Support Group for Student

# Mental Health Problems

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D.Clin.Psy 2003
University College London
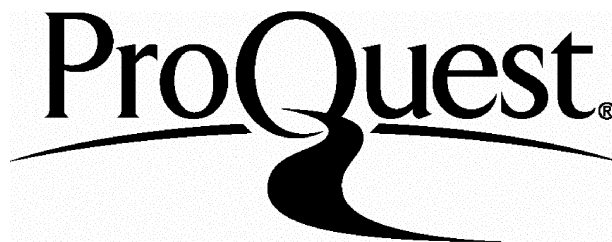
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# ACKNOWLEDGEMENTS

# ABSTRACT

This study investigated an on-line mutual support group set up for university students, a group with high levels of psychological distress. A randomised controlled design was used to investigate outcome and process in the group. Participants were randomised to one of two experimental conditions, Support Group or Information Only. Participants in both conditions had access to websites offering advice pages on common student problems. Those in the Support Group condition were also able to access an on-line mutual support group where they were able to read and reply to messages posted by other members of the group.

The study found that some students with high levels of psychological distress were receptive to, and made use of, on-line psychological advice and support. Evidence was found for the presence of helping processes that have been hypothesised as therapeutic in other research into group process. There were particularly high levels of self-disclosure and of emotional and informational support.

No significant differences in outcome were found between the two experimental conditions. This was the first known study to use a randomised controlled design to investigate an on-line mutual support group similar in structure to naturally occurring groups. Suggestions are made as to how future studies might optimise their designs in order to take account of the particular characteristics of naturally occurring on-line mutual support groups.

# CHAPTER ONE

# INTRODUCTION

The huge expansion of the Internet in recent times has led to rapid changes in the way that information can be provided and obtained, and in which communication can take place. This in turn has led to new opportunities for the provision of what have been called "telehealth" applications, "the use of electronic and communications technology to accomplish health care over distance" (Jerome et al., 2000, p. 407). Telehealth in the mental health sector is still very much in the early stages of its development but already includes on-line psycho-education (e.g.Winzelberg et al., 2000) and a form of therapy provided via email (e.g. Robinson & Serfaty, 2003). Studies of computer based cognitive therapy programmes have been reporting promising results (Wright et al., 2002; Proudfoot et al., 2003) and it is very likely these will also be available over the internet in the near future (Luce, Winzelberg, Zabinski, & Osborne, 2003; Kenardy, McCafferty, & Rosa, 2003). Another of the results of this electronic expansion is a rapid increase in the number of on-line groups brought together by their common concerns relating to both mental and physical illness (Davison, Pennebaker, & Dickerson, 2000; Madara, 2000). These on-line groups utilise the latest advances in technology to provide a form of helping, mutual aid, which is probably as old as humanity itself (Borkman, 1999).

Students in the UK are a population that has consistently been found to have higher levels of psychological stress and emotional problems than the general population

(e.g. Stewart-Brown et al., 2000; Webb, Ashton, Kelly, & Kamali, 1996). Indeed, a recent study investigating psychological morbidity found that being a student was one of the strongest predictors of psychological problems (Harrison, Barrow, Gask, & Creed, 1999). Students are also a population who are likely to have high levels of computer literacy and access to the internet. This study set out to investigate how students would respond to the offer of psychological support via the internet and, in particular, to examine the outcome and process of an on-line mutual support group provided for students at a major UK university.

This introductory chapter will review some of the background literature on mutual support groups and their relationship to psychological helping. As part of this it will consider therapeutic factors that are thought to be present in mutual support groups. There will follow an outline of the debates concerning the methodologies used in researching mutual support and then a further review of the recent literature on on-line mutual support with particular reference to outcome studies and studies investigating the presence of therapeutic factors in on-line mutual help groups. Then current research into student mental health will be briefly summarised before these various strands are integrated in the final discussion of the rationale for the study and the research questions and hypotheses the study was designed to investigate.

## BACKGROUND TO MUTUAL SUPPORT GROUPS

It could be argued that, as humans are social animals (Breur, 1982), some form of mutual helping is at the very centre of what it is to be human. Kropotkin (1900), the

anarchist philosopher, proposed that mutual aid was one of the driving forces in the evolution of social animals, including humans. This is in contrast to an interpretation of Darwinian theory as proposing a competition between individuals, which was commonly held in Kropotkin's day, and in ours. Kropotkin proposed that cooperation as well as competition was a law of nature and that mutual aid had contributed as much, if not more, to the history of mankind as competition between individuals. It was upon this principle that he built his political theories of utopian anarchism.

Whether one agrees with Kropotkin's theories or not it is clear that people have been coming together and finding both physical and emotional support in each other's company since the beginning of recorded history. The ways in which people have associated together have varied hugely across time and place with physical, economic and social conditions. One of the ways that this currently manifests itself within what are termed 'Western' cultures is in the growth of the 'self-help' movement (Levine & Perkins, 1987). That is not to say that there are not links and some similarities with movements in other parts of the world, see for example Oka and Borkman's (2000) paper on the development of mutual support groups in Japan, but it is not within the scope of this review to address these. The recent growth of this movement has been linked with the beginning of Alcoholics Anonymous in 1935 (Laudet, Magura, Vogel, & Knight, 2000) and the development of the civil rights movements through the 1960's (Oka & Borkman, 2000). Although, as Kropotkin

suggests, organising into groups for mutual support clearly has roots that stretch much further back (e.g. Hopkins, 1995).

One of the areas in which mutual support groups are currently flourishing is that of illness support groups (Davison et al., 2000) providing support for those with both physical and psychological problems. Chinman, Kloos, O'Connell, and Davidson (2002) relate the growth in mental health mutual support groups in the United States to the mental health consumer movement. This was particularly influenced by the consumer advocacy groups of the 1970's that put forward a philosophy of consumer rights and self-empowerment through mutual support. These ideas of client empowerment and community based approaches to mental health are finding their way into more mainstream mental health services in the UK (Marshall, 2003). There is now explicit recognition of the role of service users and local communities in the National Service Framework for Mental Health, "All mental health services must be planned and implemented in partnership with local communities, and involve service users and carers" (Department of Health, 1999, p. 6).

## What is Mutual Support and what is a Mutual Support Group?

There is some confusion, both within the literature and in more general usage, over the use of the terms "self-help group", "support group", "mutual aid", "mutual help group" and "mutual support group". Members of these groups commonly use the term "self-help group", while in the research literature the terms "mutual aid" or "mutual support" are most often used. For consistency, I shall be using the term

"mutual support group" which, I think, most adequately highlights that people both give and receive support within these groups (see further discussion below). I will use this term to cover groups that other authors refer to with the terms above.

Definitions of mutual support vary in the literature, an overall definition is difficult as mutual support groups will be specific to their members and to the reasons for which they were set up (Davison et al., 2000). Mutual support groups are established with extremely diverse aims and by widely varying populations. It is understandable, therefore, that the groups' structures and their approaches towards their areas of interest will be equally diverse (Humphreys & Rappaport, 1994).

However, it is useful to characterise some of the features that distinguish mutual support groups from other groups. Goldklang (1991) states that mutual support groups involve people who "share common characteristics, conditions, or situations and who join together to reach common goals" (p. 790). Humphreys and Rappaport (1994) describe mutual support groups as being "voluntary associations of persons who share some status that results in difficulties with which the group tries to deal" (p. 218). In his survey of mutual support groups Levy (1982) defines mutual support groups as; meeting in small units, having a specific focal issue, meeting regularly and frequently, and with members both expecting to give and to receive support. Salem, Bogat and Reid (1997) give a succinct description of traditional mutual support groups as "individuals facing similar life difficulties who come together to help

themselves and others" (p. 190) and that they provide a source of on-going, peer-based social support as well as a sense of community.

One factor that is often thought to be important in mutual support groups is that they are controlled by their members and that, although they may to some extent involve professionals, they are not controlled by them (Humphreys & Rappaport, 1994). Borkman (1999) places the issue of power as central to mutual support groups. She characterises power and control as being fundamental issues in health and social services. These services, she says, are generally structured with professionals as experts, often with control of diagnosis, treatment, and solutions offered. This leads to the empowerment of professionals and the disempowerment of their clients. She states that this power and control is based upon the knowledge that the professionals are thought to have and that their clients are thought not to have. She contrasts knowledge obtained through professional training with "experiential knowledge", which is gained through personal experience. For Borkman the power that mutual support groups have to help their members comes largely through the sharing of members' personal, lived experience and reflection on that experience with others in the group.

## Prevalence and Characteristics of Those Taking Part in Mutual Support Groups

There are relatively few surveys of the prevalence of mutual support groups. Kessler, Mickelson and Zhao (1997) analysed data from a national telephone survey

in the USA. The findings suggested that 25 million Americans had participated in some form of mutual support group in their lifetimes and that 10 million had participated in a group in the last year. This translates to 3.5% to 4% of the population of the United States (U.S. Census Bureau, 2003) having used a mutual support group in the last year. This is likely to be a conservative estimate as Kessler et al. excluded any groups that involved professional mental health service workers. They found that group membership had been rising in the 30 years prior to the study and that their figures agreed with the eight per cent annual growth rate that had been predicted by Jacobs and Goodman (1989).

Comparable figures do not exist for the UK, and one should be extremely cautious in extrapolating between the USA and the UK as patterns of help seeking behaviour may differ significantly. However, if the percentages of those using mutual support groups were similar this would mean that around 2 million people in the UK (Office of National Statistics, 2003) participated in some form of mutual support group in the last year.

Kessler et al. (1997) also looked at personality predictors of attendance at mutual support groups and found that those who felt that they had less personal control over their lives were more likely to have attended a mutual support group. They also found that those with lower levels of, or more conflictual, social support were more likely to participate in a mutual support group. In their survey of illness support groups Davison et al (2000) found that participation was highest for illnesses

perceived as stigmatising, such as AIDS and alcoholism, and lower for diseases that had effects that were just as devastating, but with less social stigma attached to them, such as heart disease.

It is unclear how many on-line mutual support groups exist but a brief internet search confirms the existence of a large number. Looking specifically at United Kingdom based sites, and looking at only two internet companies, Freeserve (www.mental-health.freeserve.co.uk) and on Yahoo (uk.groups.yahoo.com) it was easy to find groups concerned with agoraphobia, depression, autism and anxiety amongst others. In addition to groups on sites hosted by internet companies such as these there are a plethora of groups set up by mutual support organisations and concerned individuals, e.g. Depression Survivor (at http://depressionalliance.community.everyone.net). This is an area that is likely to continue to grow as access to the internet increases and the software used to run support groups becomes more user friendly.

## Why Study Mutual Support Groups?

The prevalence rates for participation in mutual support groups and the continuing increase in levels of involvement (Kessler et al., 1997) suggest the importance of mental health professionals taking mutual help seriously. In 1989 Jacobs and Goodman (1989) predicted that over the following two decades, as the levels of mutual help group participation increased, they would become central to the US system of managed mental health care. They foresaw an increasing collaboration between mutual help groups and mental health professionals and urged psychologists

to take a central role in these developments. Their predictions about the growth in mutual help groups seem to have been borne out (Kessler et al., 1997) as does their anticipation of the increase in managed health care provision in the US (Meissen, Wituk, Warren, & Shepherd, 1999). However, there has not been the level of co-operation between mental health professionals and mutual help groups that they predicted.

Although many individual practitioners and some parts of the health care system in the US recognise and appreciate the usefulness of mutual help it has not been widely incorporated into either the physical or mental health care systems (Meissen et al., 1999). While the mental health care system in the UK differs significantly from that in the US there is a similar, relatively low level of incorporation of mutual help groups into the mental health system (Marshall, 2003). However, there is an increasing emphasis, within the UK mental health system, on increasing clients' involvement. The National Service Framework for Mental Health explicitly highlights the recommendation that service users be involved in the planning and implementation of services (Department of Health, 1999). It is likely that the role of service users and service user groups will continue to increase within the NHS. This provides new opportunities to think about the role that they can play, not only in planning and management, but also with therapeutic work. If mutual support groups are effective they can potentially provide a kind of support that it would be very difficult to provide through mental health care professionals and which may be extremely cost-effective (Marshall, 2003).

However, in these days of evidence based practice, if mutual support interventions are to be more regularly included in managed health care provision (whether in the US or the UK) there is a continuing need for research investigating their benefits (Meissen et al., 1999). Meissen et al. suggest that such investigation needs to include not only the subjective viewpoints of group members (levels of satisfaction/effectiveness), but also more objective measures of outcome and cost-effectiveness. Humphreys and Rappaport (1994) also stress the importance of evaluating effectiveness using measures of 'non-clinical' changes experienced by members, not solely using instruments produced for use in assessing professional interventions (see further discussion of this matter below under 'Methodological Issues').

## Therapeutic Factors in Mutual Support Groups

The complexity of the interactions and processes taking place make evaluation of group therapy interventions in general and mutual support groups in particular problematic. As will be discussed below different authors have characterised various therapeutic factors, these often overlap and interact with each other and so should not be thought of as mutually exclusive.

Although Yalom (1995) was mainly concerned with traditional group therapy the therapeutic factors that he outlines in his seminal work 'The Theory and Practice of Group Psychotherapy' are probably some of the most quoted factors in the mutual

support literature. He cites eleven factors as being at the heart of the therapeutic power of group therapy: the instillation of hope, universality, the imparting of information, altruism, the corrective recapitulation of the primary family group, the development of socialising techniques, imitative behaviour, interpersonal learning, group cohesiveness, catharsis and existential factors.

Other researchers have identified different factors or have defined similar factors in different ways. There are, however, seven factors that stand out in the literature as being particularly relevant to mutual support groups, both face-to-face and on-line, they are detailed below.

*Universality*

In many papers the most positive aspect of mutual support groups is cited by the group members as the experience of finding that there are others who share their problems, feelings and experiences (e.g. Lieberman & Russo, 2002; Roberts et al., 1991). Yalom names this factor, 'Universality'.

*Empowerment*

Whereas Yalom's therapeutic factors apply to all groups, whether professionally led or organised and run by the group members themselves, many authors cite the importance of power relationships in understanding the therapeutic nature of mutual support groups. As discussed above, Borkman (1999) points to the contrast between the patient-therapist relationship in most health care settings and the relationships

within mutual support groups. She describes traditional patient-therapist relationships as setting up patients as passive recipients of help, as victims. Whereas, she says, mutual support relationships change victims into helpers. Finding that they are able to help others is part of a process of empowerment in which members also develop the confidence and ability to help themselves. Madara (2000) points to the empowering effect of seeing how others, who are or have been in the same position as themselves, have taken responsibility for their own recovery.

*Imparting information and experiential knowledge*

Another of the therapeutic factors that Yalom quotes is the imparting of information. The imparting of information can be related to practical issues or can be of a more psychological nature. In some cases the information itself may not be that helpful, but may fulfil other functions, such as showing that others care (and so overlaps with social support, below) or the giving of information may be helpful to the giver (see the helper-therapy principle below).

Another factor that overlaps with imparting information, particularly in mutual support groups, in which a professional 'expert' is not present, is that of experiential knowledge (Borkman, 1999). This is a concept closely tied to issues of power and control. It refers to knowledge gained through a process of personal experience and reflection on that experience. Borkman characterises mutual support groups as communities in which experiential knowledge is created and disseminated by members reflecting on and discussing their own and others' lived experiences.

Borkman claims that this creates a kind of knowledge that is part of the processes of empowerment. In contrast to knowledge that comes from experts, this experiential knowledge belongs to the group members and, according to Borkman, because of the close relationship between knowledge and power, it therefore also locates the power to effect changes in the hands of the group members rather than with the professional 'experts'.

*Narrative or meaning transformation*

Both the function and functioning of mutual support groups can be theorised in very different ways depending on the approach that is taken. Rappaport (1993) contrasts two approaches, that of mutual support groups as treatment for people with problems or as narrative communities in which identity transformation takes place. The treatment-orientated approach would be most in line with a medical model and also with the way that many psychology services approach therapeutic groups. This contrasts with an approach coming from a narrative-based theory of knowledge in which story telling is a central process in both the maintenance and the transformation of our understanding of ourselves and the world (Schank, 1990). Mutual support groups can then be seen as narrative communities, which can provide the opportunity to develop different, and hopefully more adaptive, narratives for both the individuals and the group as a whole (Rappaport, 1993).

However, one does not necessarily need to hold what can seem a rather radical epistemological viewpoint to maintain that meaning and meaning transformation are

extremely important therapeutically. Brewin and Power (1999) suggest that meaning change may be at the heart of the psychotherapeutic process for all psychotherapy. It is also, therefore, likely to be of importance in psychological change occurring within mutual support groups.

*Personal disclosure*

Yalom (1995) also discusses catharsis as a therapeutic factor that can be present in groups, this is when emotions are released as something that had previously been held inside is able to be expressed. This is probably not the same as, but is certainly linked with the concept of personal disclosure. The work of Pennebaker (e.g. 1993; 1999) suggests that disclosing emotional information can have beneficial effects on both physical and mental health. Pennebaker's work has mainly been based on written disclosure, in diary form. It may, therefore be particularly relevant to on-line mutual support groups in which messages are written onto an internet bulletin board and left for other group members to read and reply to. Salem, Bogat et al. (1997) studied messages posted to an on-line mutual support group for depression. They found that compared to similar studies of face-to-face groups there was a much higher rate of self disclosure in the on-line group. This suggests that conditions in on-line mutual support groups may be particularly conducive to personal disclosure.

*Social support*

It is well documented that levels of social support are linked with psychological well being (e.g. Brown, Andrews, Harris, Adler, & Bridge, 1986; Cohen & Wills, 1985).

Several aspects of social support have been investigated as being important in their effect on well being (Hogan, Linden, & Najarian, 2002), including the size of the person's social network, the levels of emotional support received, supportive behaviours such as provision of advice and information, and the subjective perception of being supported. As can be seen from this very brief list, social support is an extremely broad concept and is likely to include opportunities for most of the therapeutic factors already mentioned. Studies have suggested that mutual support groups raise levels of social support (Humphreys & Noke, 1997) and that giving and receiving social support is related to levels of well being (Maton, 1988).

*Helper-therapy principle*

Also overlapping with some of the factors associated with social support is the helper-therapy principle, originally expounded by Reissman (1965). The helper-therapy principle posits that the giving of help to others acts therapeutically on the giver. Maton's (1988) study of three mutual support groups suggested that it was those who both received and gave support who had the highest levels of well-being. Roberts et al. (1999) show that within a mutual support group for those with serious mental illness giving help is associated with improvements in psychosocial adjustment. Interestingly, they also found that that receiving help led to better outcome for those well integrated into the group but for worse outcome for those not well integrated. They suggest that the mediating factor may be the subjective perception of the helping behaviour, with those not yet integrated into the group perceiving offered help as threatening rather than supportive.

## Methodological Issues in Research into Mutual Support Groups

The evaluation of mutual support groups raises a series of issues related to research methodology. The 'gold standard' of outcome research in psychological therapies is often thought to be the randomised controlled trial (RCT). While problems with this are explicitly acknowledged in the literature (e.g. Roth & Fonagy, 1996), the RCT still holds its privileged position. For example, the choice of the top strength of recommendation in the recent UK government guidelines on treatment choice in psychological therapies (Department of Health, 2001) is based solely on RCT evidence.

There is much debate within the literature on appropriate research approaches to studying mutual support groups. As discussed above, two of the features that seem central to what mutual support groups are is that they are largely controlled by their members and that they are specific to the particular needs of those members. This raises problems when subjecting mutual support groups to research that requires the groups to submit to control by researchers as is required in RCT design. Humphreys and Rappaport (1994) argue that research designs that require control of the leadership of the group or that require random assignment to the mutual support group or some comparison condition actually change the nature of the groups they are trying to study and so are suspect as studies of naturally occurring mutual support. They also point out that naturally occurring mutual support groups involve a self selection procedure in which those who are most likely to benefit continue

attending while others cease to attend. While dropout in an experimental trial would normally count against an experimental condition, this self-selection process is a normal part of the functioning of a mutual support group. Random assignment, which is an essential part of a RCT, is problematic in a study of mutual support groups since it disrupts the normal processes of the group. Humphreys and Rappaport suggest that 'worldly evaluation research' is likely to be a more useful paradigm than the RCT. In this alternative paradigm the researchers engage in a more collaborative relationship with the group under study, 'inventively find comparison groups, and attempt to study groups in context' (p. 223).

Others have suggested different approaches to applying an RCT approach to research into outcome in mutual support groups. For example, using randomisation after participants have chosen to participate in some sort of self-help approach (Toro, 1990). Elaborations on this approach, to try and account for the self-selection inherent in mutual support groups (discussed above), aim to develop statistical predictors of self-selection based on those in the mutual support condition and compare outcome with a group from the randomised control condition who are selected using these predictors (Goldklang, 1991).

In view of these issues, many outcome studies into mutual support groups use quasi-experimental designs (Pistrang & Barker, 2003), in which outcomes of the mutual support group intervention are measured and compared with a non-intervention condition, but the comparison conditions are not obtained through a randomisation

procedure. This is often achieved by using a similar group of non-participants or through using pre and post measures. Other studies do not use comparison, but instead use appropriate outcome measures (e.g. members' satisfaction with their groups) at a single time point but cannot, therefore, measure change over time.

In addition to the question of appropriate study design to measure outcomes, there is also the question of which outcomes to measure. Tebes and Kraemer (1991) assert that mutual support group members often have very different perspectives on outcome from researchers. They state that when asked about outcomes that are important to them, group members often report personal changes, their satisfaction with the group and its importance in their lives. Researchers' psychosocial or other measurements of outcome may not capture these reported changes. Humphreys and Rappaport (1994) point out that even the concept of 'outcome' does not easily map onto many mutual support group members' thinking about their groups. It often seems to come from a treatment-based approach, which assumes that when a problem is fixed the client leaves treatment. Whereas many mutual support group members continue to attend their groups for long after the original reasons for attending the group have changed. They may attend as helpers, to make friends or for a multitude of other reasons. Humphreys and Rappaport suggest, therefore, that any measurement of outcome needs to take into account the aims of both the mutual support group and of its individual members.

In her report on an NIMH (The US National Institute of Mental Health) workshop looking at methodological issues in evaluating mutual support interventions, Goldklang (1991) suggests that research into mutual support groups should not be limited to outcome research, but should be descriptive, formative and process-focussed. She reports that participants in the workshop suggested that when outcome was evaluated a wide range of measures should be used, rather than just the more standard mental health measures. It was felt that assessing, for example, quality of life and level of functioning in various domains might help to capture those benefits which members of mutual support groups report but which may be overlooked by standard clinical measures.

Process related research into mutual support groups investigates the interactions that take place in the groups and tries to understand them in relationship to processes that are either known to be or are theorised to be beneficial (as discussed above). This kind of research may often take a qualitative approach in which thematic analyses or approaches such as Grounded Theory (Willig, 2001) are used to investigate the functioning of the groups. Quantitative approaches can also be used if the processes being investigated are operationalised. Kraemer and Tebes (1991) stress the importance of integrating qualitative and quantitative research in the study of mutual support groups. Humphreys and Rappaport (1994) suggest that it is important that research into mutual support groups take multiple approaches, of which outcome research is only one.

There is, therefore, something of a consensus in the literature that using a standard RCT design to measure therapeutic outcome of mutual support groups is problematic and that it is important that research is open to matters of process as well as outcome. There is general agreement that when assessing outcomes, the standard mental health measures are not sufficient; the measures used should reflect the experience of group members. This can be achieved both through the use of a range of measures and through the integration of both qualitative and quantitative approaches. However, there is less agreement about the extent to which randomised designs can be used to study a mutual support group without changing important aspects of the group being studied and possibly invalidating the study's relevance to naturally occurring mutual support groups in which power and control are more clearly located with the group membership.

## ON-LINE MUTUAL SUPPORT GROUPS

### Review of Research

Most mutual support networks on the internet take one of the following three forms (Madara, 2000): mailing lists which are subscribed to by participants who are then e-mailed any messages that are sent to the list; newsgroups which store messages on a central computer that can be read and replied to by members, and message boards, which are similar to newsgroups but work with ordinary web pages. Message boards are likely to become the most popular format in the future as they have all the advantages of newsgroups with none of the disadvantages, that is the message board

runs on ordinary web pages so users do not need to use their email programme or install new software or subscribe to a news server, plus past messages are easily available.

On-line groups are now available for a plethora of physical and mental health concerns (Chang, Yeh, & Krumboltz, 2001) including groups for depression (Salem, Bogat, & Reid, 1997), for HIV and AIDS (Brennan & Ripich, 1994), for problem drinking (Klaw, Huebsch, & Humphreys, 2000), for eating disorders (Winzelberg, 1997), and for those affected by breast cancer (Lieberman & Russo, 2002). In contrast to the amount of research on face-to-face mutual support groups, there has been relatively little research investigating on-line groups (Winzelberg, 1997) and even less evaluating their efficacy (Chang et al., 2001).

Salem et al. (1997) report that by the time of their study only seven empirical studies of on-line mutual support groups had been published. One of these was a study of a naturally occurring mutual support group for survivors of sexual abuse (Finn & Lavitt, 1994) while the other six utilised groups set up by the researchers as part of larger projects. Six years later this situation is starting to be remedied, but there are still relatively few high quality studies of this rapidly growing area. As in 1997, most of the studies since then take one of two forms; either they look at processes and participation patterns in naturally occurring on-line groups (Salem & Bogat, 2000) or they set up groups and also attempt to make some measurement of outcomes. These last set of studies vary in the similarity that their groups have with

naturally occurring on-line mutual support groups and therefore one must be guarded in the conclusions that one can draw from them about processes and outcomes of naturally occurring groups.

The following pages summarise some of the findings of the more recent studies, which expand upon the work of earlier studies in investigating both processes and outcomes in on-line mutual support groups.

Salem et al. (1997) investigated a naturally occurring on-line mutual support group for people with depression and found both similarities and differences with face-to-face groups. They compared their analysis of the postings in the on-line group with studies looking at face-to-face groups, and in particular with Roberts et al.'s (1991) study of mutual support groups for people with emotional and psychological problems, including depression. In common with face-to-face groups, Salem et al found that the on-line group provided high levels of support, acceptance and advice. They noted that almost half of the postings contained some type of social support, with emotional and informational support being most commonly offered.

There were three areas where Salem et al. (1997) noted that the functioning of the on line group differed from that of the face-to-face groups. Firstly, compared to the face-to-face groups, higher levels of directly expressed emotional support were found in the on-line group; the researchers point out that this may be due to emotional

support being expressed non-verbally in the face-to-face groups, which obviously is not possible in the on-line groups.

Secondly, they found higher levels of self-disclosure in the on-line group. Just over half of the comments contained some sort of self-disclosure. Although it may seem that this is related to the level of anonymity possible in on-line groups, Salem et al. (1997) pointed out that most of the users in their study chose not to post anonymously. They therefore suggest that the higher levels of self-disclosure might be due to electronic communication minimising perceptions of differences between people (Madara, 2000) which allows people to feel that others are similar to them, making disclosure easier. They found that an extremely large proportion of messages used experiential knowledge to help others (i.e. experience gained through a shared problem). The last notable difference reported by Salem et al. was the sex ratio, the on-line group had more male than female users in contrast to face-to-face groups where participants are more likely to be female (Luke, Roberts, & Rappaport, 1993). This was particularly noteworthy as the group was for depression, which has a higher incidence in women than in men. While this gender imbalance may be partly explained by the overrepresentation of men amongst internet users, Salem et al suggested that some of the particular qualities of communication in an on-line group may be more conducive to men giving and receiving help than face-to-face communication.

Salem and Bogat (2000) reanalysed the data from their previous study (Salem et al., 1997) using a qualitative methodology to investigate themes emerging in the group's postings. The authors identified four characteristics in the postings of the group, which they felt produced the particular social context for the provision of mutual support through this on-line group. The first type of characteristic related to *access to the group* and included the universal accessibility of the group, given that anyone with internet access can use the group. They also noted a negative aspect to accessibility, technical difficulties with posting messages to the group. The second type of characteristic related to the *lack of visual and auditory presence*. This allowed members to 'lurk', that is, to read messages without posting any themselves. New members were often encouraged to lurk in order to learn about how the group worked. However, lurking also led to some feelings of uneasiness about posting, as members could not be sure who might be reading their posts. Salem and Bogat found that anonymity was a characteristic that was accepted by group members but there was also some frustration at the lack of personal information available on those who were happy to provide it. On-line communication takes place through a written medium thus allowing the possibility of *archived information*, and this emerged as the third type of characteristic. The fourth type of characteristic related to the *roles of members*; these included the development of out of group relationships and the dispersion of leadership.

Salem and Bogat (2000) suggested that their study showed that on-line groups are not just internet equivalents of face-to-face groups, but have very particular

properties of their own. These properties give them a unique place within the range of available mutual support groups. The format of on-line mutual support groups may allow them to overcome not only physical barriers to participation, such as distance or time, but also emotional or motivational barriers. On-line groups give members control over the manner of their participation that face-to-face groups cannot, and this may aid the involvement of those who might not choose to attend more traditional groups.

Dunham et al. (1998) set up a computer mediated social support network for single mothers with young children. The project provided public message exchanges, private email, and text-based teleconferencing. The researchers found that those who used the service more tended to be those who were more socially isolated. They assessed the mothers' sense of community in the on-line group and found that overall the mothers very much felt that they were part of a community. The extent to which individuals had a sense that they were part of a community was positively correlated with the extent to which they accessed the network. In accord with the findings of Salem et al. (1997), Dunham et al. found that the group was extremely socially supportive and that many of the postings were of emotional support. They also assessed parental stress and found that mothers who participated regularly were more likely to report a reduction in their level of parenting stress than those who did not. Therefore, in line with many studies of face-to-face groups, Dunham et al. found that those who participated most in the group tended to score more favourably on outcome measures.

Few studies of on-line mutual support have used comparison groups to investigate effectiveness. Chang et al. (2001) looked at the impact on self-esteem and ethnic identity of an on-line support group for male Asian American students. They compared outcomes with a 'no intervention' control group. They also studied the processes of the group and outcome in terms of the participants' responses to the group. The group had a high level of professional involvement, with a mental health professional taking a leadership role. The professional facilitated and moderated the discussion. Each week a general question of relevance to the topic of male Asian American identity was posted by the facilitator, who further summarised responses at the end of the week.

The study did not find differences in outcome between the two conditions. This may have been partly due to the power of the study to detect differences being, as the authors note, limited by the small numbers involved (16 in each group) and by the limited time scale, four weeks. However, the authors felt that their study vindicated the use of on-line support groups with male Asian American students. Participants were generally positive about the group with the majority of them saying that they felt groups such as this one should exist. Chang et al. (2001) also noted that in a population that underutilises mental health services and tends to drop out of counselling, the entire group completed the study. However, the strength of this conclusion is tempered by participants having been paid on completion of the study and also by the study's relatively short duration.

The professionally facilitated nature of the Chang et al. (2001) group means that one should be careful about comparing it with naturally occurring mutual support groups, in which professionals are generally much less involved. However, the processes of the group seemed to be similar to those found in other studies of on-line mutual support groups (Klaw et al., 2000). The most coded process was that of self-disclosure followed by 'edification', which the authors equate with the provision of information. This may equate with what had been coded as social support in other studies (e.g. Salem et al., 1997). Chang et al also found that the change in the level of self-disclosure over the life of the group showed a similar pattern to that found to occur in face-to-face groups. They concluded that both the processes and the patterns of change in those processes were similar to those occurring in face-to-face groups and thus, that on-line mutual support groups have "the potential to provide support and foster therapeutic change" (Chang et al., 2001, p. 326).

Winzelberg (1997) analysed postings over a three month period to a naturally occurring on-line mutual support group for people with eating disorders. He found that members provided help to each other in similar ways to those found in face-to-face groups, providing emotional support, information and feedback to each other. There were high levels of self-disclosure and provision of support. He also found that the group was particularly active at times when more traditional helping services would not be available, in the evening and late at night. He considered that his findings suggested that on-line mutual support had the potential to be a useful

addition to the range of psychological help available. However, he voiced some reservations about the possibility of unhealthy attitudes and incorrect medical information being propagated within groups.

In a later study Winzelberg et al. (2000) set up an on-line discussion group as part of a randomised controlled study of a programme to help reduce risk factors for eating disorders. The programme also included the completion of regular exercises and assignments using interactive software. At follow up, compared to the control group, the intervention condition showed improvements in body image and "drive to thinness". There was a high level of participation in the discussion group, but relatively moderate levels of perceived social support from the group. This is in contrast to other studies suggesting much higher levels of perceived social support (e.g. Dunham et al., 1998). The structure of the group may have influenced this; a somewhat prescriptive approach was adopted in which participants were expected to post a message and reply to a message on a weekly basis as well as completing assignments for the other part of the programme. The research assistant would chase up those who failed to comply. Such an approach is likely to have produced relationships towards the group very different from those in naturally occurring on-line mutual support groups. For example, it may have had an impact on the participants' perception of the motives of others in posting their messages. Winzelberg et al's study was not designed to investigate naturally occurring on-line support groups, but its conclusions demonstrate that on-line groups involving aspects

of mutual support can be integrated into successful on-line psychological interventions.

Klaw, et al. (2000) looked at an on-line mutual support group for problem drinkers. They found that the group offered a supportive environment in which over half the messages posted provided emotional support or information and advice. They also found that two thirds of posts provided some level of self-disclosure, which they thought fulfilled an important function within the group. They hypothesised that self-disclosure alleviated shame and also served to normalise the experiences of group members, a factor widely thought to be one of the therapeutic factors of group interaction (Yalom, 1995; Lieberman & Russo, 2002). They felt that self-disclosure also provided both emotional support and information and often elicited support from others. Almost a third of the posts provided emotional support. Klaw et al. reported that the opportunity to provide support was likely to be one of the therapeutic factors present in the group (see the 'helper-therapy' principle, Reissman, 1965, and also discussed above). They also noticed that much of the support provided was global rather than specific to particular problems. They felt that this kind of support, which they called, "global, unconditional", might be central to the therapeutic nature of on-line mutual support groups. They analysed the processes of the group using a similar coding procedure to Winzelberg (1997) and to Salem et al. (1997). This allowed them to compare relative frequencies of processes to those found in these studies. In all three studies the most frequent communication processes were to provide self-

disclosure, the next most frequent was to provide information or advice, followed by provision of emotional support and then requests for information or advice.

In choosing to study an on-line mutual support group for problem drinkers, Klaw et al. (2000) had deliberately set out to investigate a group concerned with an 'externalising' problem that was more prevalent amongst men than women. This was in contrast to previous studies, which had looked at problems more prevalent among women (e.g. depression, care giving, eating disorders, sexual abuse) and had found unrepresentative proportions of men in the on-line groups (e.g. Finn & Lavitt, 1994; Salem et al., 1997). As discussed above, an explanation for this could have been that it was due to the gender inequality in the number of men on-line. However, in their study Klaw et al. also found a gender atypicality, but in their case women were over-represented. They followed Finn (1996) in suggesting that on-line mutual support groups may provide a place in which relative minority groups in any particular community may feel safer discussing their problems than in more traditional face-to-face settings. They also noted that the content and process codings for postings did not vary with gender, which was in line with the findings of Salem et al. (1997).

Lieberman and Russo (2002) found some interesting similarities and differences in the structure of face-to-face and on-line groups for breast cancer. The diversity of people accepted in the on-line group far exceeded the norm for face-to-face groups. The membership structure of the on-line groups varied from that of the face-to-face

groups; they noted in particular the presence of non-participative members ("lurkers") in the on-line group. The on-line groups also tended to have a high turnover of members.

Lieberman and Russo (2002) also noted similarities; both face-to-face and on-line groups tended to have a core group of members who provided leadership and communicated the culture of the group over time. Through analysis of postings and through direct report from participants, Lieberman and Russo reached the same conclusion as other studies, that the on-line mutual support group provided a very supportive environment. They concluded that the on-line group provided some of the minimum conditions necessary for a productive group environment. Among these, they noted: a sense of similarity, in order to normalise the experiences of the members; provision of support and information, and a cognitive framework of thinking about the problem(s) that brought the group together. Overall, they found that on-line groups mirror the processes and member perceptions of face-to-face groups. They also found that the participants in on-line groups developed meaningful relationships with other group members.

Lieberman and Russo (2002) also attempted to investigate the effects of on-line group participation by comparing the quality of life scores of on-line group members with those of women attending face-to-face groups. They found that women who were participating in the on-line group scored more highly on quality of life scales than women who had just started participating in face-to-face groups, and at

generally similar levels to women who had participated in face-to-face groups for over six months. Although this suggests that members of the on-line group may be functioning at a higher level than those who have just joined face-to-face groups, implications about causal effects cannot be drawn because of the possibility of sampling bias.

Houston, Cooper and Ford (2002) undertook a one-year prospective study of users of internet mutual support groups for those with depression. They found that heavier users of the groups were more likely to have had a significant reduction in their level of depression than those who used the groups less often. They also found that users of the groups had lower levels of social support than would be expected in patients with major depression. They felt that this confirmed their hypothesis that those with low social support are more likely to use an on-line mutual support group. Their data suggested that the groups might be used by those who did not have access to a face-to-face group or who found that the anonymity of the internet group allowed them to discuss issues more freely than they would otherwise feel happy doing. They also found that users reported high levels of satisfaction with the groups. They suggested that on-line mutual support groups might usefully be integrated into professional health care, either through the participation of mental health professionals or through the training and support of group leaders. However, they stressed the importance of more studies, particularly RCT's, before on-line mutual support groups could be recommended.

Barrera, Glasgow, McKay, Boles and Feil (2002) conducted a randomised trial with diabetes patients to investigate the effect of participation in an on-line group on perceptions of social support. Participants were allocated to one of four conditions, all of which were administered via the internet: information about diabetes only; a personal self-management coach; an internet support group; a self-management coach and internet support group. The internet support group consisted of two 'forums'. In one forum, group members posted messages to each other with little intervention from the research team. The other forum was more structured, with a member of the research team leading discussion about a particular topic. The results showed that at three months there were significant increases in perceived social support in both support group conditions relative to the information only condition. However it should be noted that participation in this trial was restricted to those who did *not* have access to the internet at home or at work, they were provided with computers for the duration of the study. While this does not affect the internal validity of the study it does the external validity and suggests that care should be taken in generalising the findings to naturally occurring support groups whose participants will obviously consist of those who *do* have access to the internet.

## Summary of Salient Findings from Recent Research into On-line Mutual Support Groups

There follows a summary of some of the themes coming from the current literature on on-line mutual support groups. Research in this area is growing; there are at least double the number of studies that there were in 1997. However, there is still a

comparative paucity of research in an area of psychological support in which so many are involved and that has such a huge potential for expansion both in the informal sector and through integration with professional helping services. Several of the studies reviewed above attempted to investigate outcomes of on-line support group participation, but were hampered to various extents by the difficulties inherent in assessing outcome in mutual support groups addressed above.

Although mainly concerned with looking at processes in the on-line group, Lieberman and Russo (2002) attempted to measure outcome by comparing quality of life in participants of the on-line group with those in face-to-face groups for the same problem areas. Although they showed that members of the on-line group were doing reasonably well, there were no initial measures or group comparisons, without which it is not possible to say whether the quality of life scores were related to on-line support group participation.

Both Dunham et al. (1998) and Houston et al. (2002) looked at the relationship between outcomes and level of group use, both finding that better outcomes were associated with greater levels of group use. However, neither of their study designs enabled them to comment on the nature of the association of outcome to group use. Three of the studies reviewed above used randomised controlled designs to investigate outcomes. Two of these studies, Winzelberg et al.'s (2000) study of a programme designed to reduce the risk factors of eating disorders and Barrera et al.'s (2002) intervention with diabetes patients found differences in outcome between

those in the on-line mutual support conditions and those in the control conditions. Chang et al. (2001) also used a randomised controlled design but did not find differences in outcome between the support group and control conditions; as mentioned above, this may have been related to the limitations of the study. All three of the studies that used randomised controlled designs, studied mutual support groups where there was significant professional involvement. Thus, although informative about the use of on-line support groups as part of a programme involving professional input, they are limited in what they reveal about naturally occurring on-line mutual support groups.

Several of the studies reviewed above looked at the processes taking place in the on-line mutual support groups they were studying. Salem et al. (1997), Winzelberg (1997), Lieberman and Russo (2002), Klaw et al. (2000), and Dunham et al. (1998) all found some similar processes taking place within the on-line groups as have been found in face-to-face groups. These processes were conducive to several of the therapeutic factors discussed above. In addition, the studies so far suggest that on-line mutual support groups may have characteristics of their own that result in high levels of directly expressed emotional and informational support and self-disclosure. The structure of on-line groups also removes some barriers to participation in face-to-face groups, particularly those associated with time and proximity. On-line groups also provide anonymity and the possibility of participating at the level the group member chooses, particularly by allowing members to read messages without posting.

# STUDENT MENTAL HEALTH

Given the large number of students in the UK there have been relatively few studies looking explicitly at the general mental health of the student population. However, those that there are tend to suggest that students suffer from higher levels of anxiety and depression than similar samples in the general population (Oxford Student Mental Health Network, 2003).

Stewart-Brown et al. (2000) found that the general health of students was poor relative to the non-student population and that their emotional health was more of a problem than their physical health. They compared the health of students to that of populations local to the students' place of study using a general health questionnaire, the Medical Outcomes Trust Short Form 36 (SF-36). Two of the SF-36's eight sub-scales are specifically related to emotional functioning. One is a general measure of mental health and the other a measure of how emotional problems have impacted on work over the previous four weeks. Stewart-Brown et al. found that students scored significantly lower than the local population on all of the SF-36's sub-scales after controlling for age, gender and social class. The largest difference was in how emotional problems affected their ability to work. The most common causes of student worry were cited as problems with money and with work or study. These were also the main causes of worry in the local populations but with lower frequencies. In a pilot study, Monk (1999) also reports that student stresses relate principally to financial worries and the demands of their study. She found that these

often exacerbated existing emotional problems. Anxiety was the main psychological problem reported by students in her study.

In their large-scale study of alcohol and drug use in UK students, Webb et al. (1996) administered the Hospital Anxiety and Depression Scale (HADS) to a sample of over 3,000 students. They found levels of anxiety considerably higher than would be expected from the general population norms (Oxford Student Mental Health Network, 2003). Although the HADS is not a diagnostic instrument, Webb et al. found scores indicating 'probable' clinical levels of anxiety in 23% of male students and in 35% of female students. A study conducted by Harrison et al. (1999) investigating psychological morbidity in the UK found that being a student was one of the strongest predictors of psychological problems. They assessed morbidity using the General Health Questionnaire with a sample size of over 38,000. Interestingly for this study, the strongest predictor of psychological problems was lack of someone to talk to about their problems, followed by long-term physical illness. Being unemployed or being a student were the next two strongest predictors.

Students, therefore, provide a population with a relatively high level of psychological need, most of whom would have regular access to the internet through the provision of computer facilities by the university (on top of any private access they may have). They might therefore be receptive to and likely to benefit from the provision of on-line psychological support through an on-line mutual support group.

# SUMMARY AND AIMS OF THE STUDY

On-line mutual support groups are a source of support for a growing number of people. There is little psychological research in this area. The available research suggests that on-line mutual support groups share some of the characteristics that are thought to be of therapeutic value in face-to-face groups, that they have particular characteristics of their own which may encourage therapeutic interaction, and that they have the advantage of being accessible to people who might not be able or not choose to attend a face-to-face group.

While there are debates about the appropriateness of using randomised controlled trials (RCT's) to assess outcome in mutual support groups, the RCT is still seen as the gold standard in psychotherapy research. However, to date, the RCT's that have been undertaken using on-line mutual support groups have significantly differed in their structures from those occurring naturally. It is difficult, therefore, to draw conclusions about outcome in naturally occurring groups from their results. On-line mutual support groups potentially provide an exciting addition to more traditional mental health services. It is therefore important that more research is undertaken investigating the potential benefits offered by these groups.

While taking into consideration the reservations expressed in the literature about using RCT's to assess outcome in mutual support groups, this study used a randomised controlled design to assess outcome while aiming to simulate the

structure of naturally occurring mutual support groups as closely as possible. The study used a range of outcome measures; one used in clinical work and others assessing more general measures of well-being. In addition to assessing outcome, the study aimed to investigate the processes of the group and to add to the growing body of research into the therapeutic processes present in on-line mutual support groups. It was also designed to act as a formative evaluation (Rossi & Freeman, 1985) in the setting up of an on-line mutual support service for students.

Students, a population with higher than general population levels of psychological distress and with high levels of internet access, were offered the opportunity for on-line psychological support. Those who signed up for the study were randomised to one of two conditions, an Information Only condition in which participants had access to a website containing advice pages on common psychological problems facing students, and a Support Group condition in which participants had access to the same advice pages but were also provided with an on-line mutual support group.

The study was designed to investigate the following preliminary research questions:

1) Will students with high levels of psychological distress be receptive to the provision of on-line psychological advice and support?

2) What issues of concern do students address using the advice pages and the support group?

3) What processes occur in the on-line support group?

The study aimed to test the following main hypotheses about the outcome of the on-line mutual support group:

1) Relative to students in the Information Only condition, those in the Support Group condition will have at post-test:

   a) lower levels of psychological distress

   b) higher levels of psychological well being

   c) a greater sense of being part of the university community.

2) For students in the Support Group condition those who make greater use of the support group will receive greater benefit.


Finally the study aimed to investigate the following subsidiary research question:

1) What are the students' opinions of the advice pages and the support group?

# CHAPTER TWO

# METHOD

## PARTICIPANTS

Participants were recruited by a mass email to all undergraduates and postgraduates at University College London. They were asked if they would like to participate in project testing a new website to see how useful it was at reducing student stress levels (see Appendix 10). Undergraduates were emailed first; twelve days later postgraduates were emailed. The delay was to allow for the processing and registering to the site of first wave of participants.

The entry page to the site was accessed 1,981 times during the first two and a half weeks. This gives an estimate of the number of individuals who looked at the page, but does not account for those who may have accessed the page more than once. The entry page was accessible to all, but to proceed to the pages giving information about the project it was necessary to log in using a university id. The reduction in numbers at this stage may be attributable to students being put off by the formal login procedure or having forgotten their passwords. The flow diagram (Figure 1) illustrates the recruitment process over the first 2½ weeks.

To summarise, in the first 2½ weeks of the study, a maximum of 1,981 students expressed an interest in the study, up to 646 of those did not join the study most likely because of problems with logging in, an additional 979 decided they did not

want to join the study after reading about it and 86 did not want to fill in the initial questionnaires. As mentioned above, apart from those who actually decided to participate these are not exact figures, as we cannot account for those who may have visited the site several times before deciding to join. However, they are useful in giving us an insight into some of the selection that may have been going on in determining the eventual study participants.

Having advertised the study as aimed at students experiencing high levels of stress or other psychological problems, it was felt to be unethical to restrict entry only to those who applied within the first 2½ weeks, so recruitment was continued throughout the study period. This was also in accord with the functioning of naturally occurring on-line mutual support groups in which members are able to join and leave the groups at any point. However, in practice, most of the participants joined during the first 2½ weeks with only another 13 joining during the remaining period. The total number of participants in the testing phase of the project was 283.

Power analysis conducted using the on-line Harvard clinical trials software (http://hedwig.mgh.havard.edu/cgi-bin/sample_size/quan_mesur/para_quant.html), with an 80% power to detect an effect size of .5 (a medium effect size when looking for a difference in means), gave a sample size needed of 128 participants, ie. 64 in each condition. The number of participants recruited was, therefore, well above the estimated sample size needed.

There were 198 (70%) women participants and 85 (30%) male participants. This gender distribution varied significantly from the overall gender proportions at the university of 52% women and 48% men ($\chi^2(1) = 36.6$, p < .001) based on statistics for total student numbers in the year prior to the study (UCL, 2003) (current statistics were not available at the time of writing). The mean age of the participants was 23 years, but as there was large range of ages (18 to 56 years) the participants are probably more adequately represented by the median age, which was 21 years. When asked about their ethnicity, 72% of the participants responded that they were white with the next largest group being Asian (11%). The remaining 17% covered a broad range of other ethnic groups.


## ETHICAL APPROVAL

The study was approved by the Joint UCL/UCLH Committee on the Ethics of Human Research (see Appendix 1).

*Figure 1*

*Flow diagram illustrating recruitment of participants*

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┌─────────────────────────────────────┐
│   Email to all students at University │
│     (potential contact 16,800)        │
└─────────────────────────────────────┘
                   │
┌─────────────────────────────────────┐
│ Entry page to joining website accessed│
│            1,981 times                 │
└─────────────────────────────────────┘
                   │
┌─────────────────────────────────────┐
│       First information page           │
│        accessed 1,335 times            │
└─────────────────────────────────────┘
                   │
┌─────────────────────────────────────┐
│      Second information page           │
│        accessed 662 times              │
└─────────────────────────────────────┘
                   │
┌─────────────────────────────────────┐
│           Consent page                 │
│        accessed 389 times              │
└─────────────────────────────────────┘
                   │
┌─────────────────────────────────────┐
│      Initial questionnaires            │       ┌──────────────────┐
│       accessed 356 times               │       │  Additional 13    │
└─────────────────────────────────────┘       │ students join study│
                   │                              │after first 2½ weeks│
┌─────────────────────────────────────┐       └──────────────────┘
│       Initial questionnaire            │
│     completed by 270 students          │
└─────────────────────────────────────┘
                   │
┌─────────────────────────────────────┐
│     Total number of students           │
│        joining study is 283            │
└─────────────────────────────────────┘
```

# DESIGN

The study was designed to investigate both outcome and processes in an on-line mutual support group set up for this purpose. The study took place in three phases: an initial testing phase, during which participants were not randomised; a randomised phase during which the main bulk of the participants were recruited and randomised to one of two conditions (support group and no support group); a final non-randomised phase during which participants in both conditions were able to use the support group. Only data from the randomised phase were analysed. The presentation and analysis followed the CONSORT guidelines on reporting randomised trials (Moher, Schulz, & Altman, 2001).

# PROCEDURE

*Screening*

After students had been recruited, their initial questionnaire data were used as a screen by the researcher to ensure that any students indicating high levels of risk to self or others could be referred to appropriate sources of help.

Students who were not considered at immediate risk of harming themselves or others but who scored over the recommended cut-off points on the risk measure and had not indicated that they were currently receiving psychological help were emailed. The scoring structure of the risk scale meant that there were often scores just over or just under the cut-off point. The questionnaire answers of these students were discussed

by the researcher (a trainee Clinical Psychologist) and his supervisor (a Clinical Psychologist) and an email was sent if it was felt that the student might benefit from more psychological help than would be found on the website advice pages. The email advised that the questionnaires they had answered indicated that they might find it helpful to seek additional support and giving them details of how they could contact the researcher or his supervisor if they wished to discuss why they had been sent the email.

In total 46 emails were sent out (see Appendix 11). Of these, seven students emailed the researcher asking for more information about why they had been sent the email. The researcher emailed back to each of these students describing, in plain English, what the pattern of their answers suggested and why they might like to seek further help (see example in Appendix 12).

None of the students to whom a reply was sent requested further information or advice from the researcher or his supervisor. It was of note that in the feedback at the end of the study one student commented that it had been helpful for them to receive the email and had prompted them to find psychological help.

**Randomisation**

After screening, participants were randomised to one of two conditions, Information Only or Support Group, in blocks of six. Participants in the Information Only group were given access to a website containing information about sources of support and web pages with advice on common student problems (see Appendix 13 for an

example of one of the advice pages). Participants in the Support Group condition were given access to an identical website to those in the Information Only condition, but with the addition of an on-line mutual support group.

## Description and Operation of the Sites

In order to create the advice pages, the researcher trawled the internet looking at the websites of other universities' counselling services (there were no on-line advice pages available at the university at which the study took place). From these, he compiled a list of common problems covered in the sites and chose the sites with, what seemed to him, the clearest and most helpful pages. He contacted the counselling services concerned and obtained permission to use the contents of their advice pages as part of the study. He then edited and adapted the contents of each advice page to make them appropriate for the university at which the study took place by, for example, inserting the details of local sources of support. Finally, he designed the layout and structure of the website and standardised the appearance of the pages (see Appendix 13). Each web page included code that recorded whenever the page was accessed, so that the level of use of each page could be tracked. In order to enter the websites participants were required to log in; this allowed access to the study websites to be restricted to those in the appropriate experimental condition.

The on-line mutual support group took the form of a bulletin board to which participants could post messages, which all other participants in the Support Group condition could read and reply to if they desired. (See Appendix 13 for an example of the mutual support group format). The first time that participants accessed the

board they were asked to create a pseudonym by which they would be identified when they posted messages to the board. They also had the option of being automatically emailed when someone replied to one of their messages.

Visitors to the on-line mutual support group were tracked individually. This included the automatic recording of the time they logged on to the support group, as well as whether they read or posted messages.

The on-line support group was initially beta-tested by four trainee clinical psychologists and a selection of psychology undergraduates recruited through seminar groups and a group email. During this testing period, problems in the operating of the website and group software were rectified and some initial use was made of the on-line support group. This meant that when the main testing period was entered and the bulk of the study participants were recruited, there was already some discussion in the support group. The researcher posted to the board minimally and only to address administrative issues and to welcome new participants to the board.

Ten weeks after the initial recruitment, participants in both Information Only and Support Group conditions were asked to fill in the final questionnaires and were told that all who completed them would be entered into a raffle with the possibility of winning £25 in book tokens. On completion of the final questionnaires, those in the Information Only condition were told about the support group and were allowed

access to it if they so wished. The support group continued to operate for a further seven weeks, until the end of the University year.

## MEASURES

On recruitment into the study, participants completed an on-line questionnaire giving personal information and on-line versions of the questionnaires below.

Printouts of the web-pages containing pre- and post- measures can be found in Appendices 4 to 9.

## Demographic and Background Information

Demographic and background information was collected from each participant (see Appendix 4).

## Pre-Test

The pre-measures were designed to look at overall psychological distress, subjective level of general well being, and participants' sense of being part of their university community. On-line versions of the following questionnaires were completed on recruitment to the study.

*Clinical Outcomes in Routine Evaluation (CORE: CORE System Group, 1998).* The CORE is a 34-item questionnaire designed to assess levels of psychological distress. It also has three subscales measuring well-being, problems/symptoms, level of general functioning, and a fourth scale indicating possible levels of risk to self and others. Normative data are provided from which clinical cut-off scores for men and women are suggested. Items are scored on a five-point scale from "not at all" to "most or all of the time" and coded on a scale from 0 to 4 with higher scores indicating greater levels of problem. The questionnaire includes both positively worded items, such as "I have felt warmth and affection for someone" and negatively worded items, such as "I have thought I have no friends."

Evans et al. (2002) assessed the psychometric properties of the scale and found that it was reliable, was able to distinguish between clinical and non-clinical populations and had good sensitivity to change. Cronbach's alpha for the four sub-scales ranged from .75 to .95. Stability coefficients ranged from .87 to .91, apart from the risk scale which had a stability of .64. However, this might be expected on a scale that is designed to be sensitive to highly situational variables related to levels of immediate risk. Whewell and Bonanno (2000) found good correspondence between risk scores on the CORE and the clinical judgement of experienced psychotherapists in a sample of patients with borderline personality disorder. Evans et al. also found that the CORE had good convergent validity with other accepted measures of psychological distress including the General Health Questionnaire (Goldberg & Hillier, 1979), the

Brief Symptom Inventory (Derogatis & Melisaratos, 1983) and the Inventory of Interpersonal Problems (Barkham, Hardy, & Startup, 1996).

*Satisfaction with Life Scale (SWLS: Diener, Emmons, Larson, & Griffin, 1985).* The Satisfaction with Life Scale is designed to measure subjective general life satisfaction. It consists of five statements, such as, "In most ways my life is close to ideal," which are rated on a 7-point scale from 1 = "strong disagreement" to 7 = "strong agreement". It has good reliability, internal consistency, and studies of several data sets have suggested that it is measuring a single factor (Weinman, Wright, & Johnston, 1995). Studies (Pavot & Diener, 1993) of its validity have suggested that it has convergent validity with other subjective measures of well-being and is also negatively correlated with measures that would be expected to vary inversely with life satisfaction, such as neuroticism and emotionality.

*Sense of Community Index (SCI: Chavis, Hogge, McMillan, & Wandersman, 1986).* The Sense of Community Index is designed to measure the respondent's subjective sense of being part of a community. It has been widely used in various community settings (e.g. Brodksy & Marx, 2001; Pretty, Andrewes, & Collett, 1994) Reliabilities for the scale are acceptable, ranging from .64 to .69 (Chipuer & Pretty, 1999). The scale has good face validity and several studies (Chipuer & Pretty, 1999) have supported its content validity in representing the model of sense of community on which it is based (McMillan & Chavis, 1986). It has convergent validity with other measures that would be expected to vary with sense of being part

of a community, such as length of time people have lived in their community and their level of fear of crime (Chipuer & Pretty, 1999).

The wording of the questions within this study was adapted to assess the participant's sense of community within their university, for example, "I feel at home at UCL". The final questionnaire consisted of 11 items rated on a 4-point scale from 'strongly disagree' to 'strongly agree'. One question, 'I can recognize most of the people who live on my block', was excluded as inappropriate to the population of the study, even after adaptation.

## Post-Test

Ten weeks after the pre-tests, participants in both conditions were asked to complete another set of on-line questionnaires. These consisted of a repeat of the pre-test questionnaires plus questions designed to assess their satisfaction with the service offered by the websites. They were asked how often they had used the advice pages and support group (for those in the Support Group condition) and were asked three open-ended questions: what they liked about the site; what they did not like about the site and if they had any suggestions for improvements. The answers to the open ended questions were summarised and then grouped thematically.

*Client Satisfaction Questionnaire (CSQ-3: Greenfield & Attkisson, 1989).* In addition to the open-ended questions, both groups were asked to complete a three-

item form of the client satisfaction questionnaire, which included items such as, "In an overall, general, sense how satisfied are you with the website?" This is a widely used questionnaire, with good face validity, that gives a quick measure of overall satisfaction with a service. In this study, Cronbach's alpha for the scale was .79, indicating good internal consistency.

*On-line Support Group Questionnaire (OSGQ: Chang et al., 2001).* This questionnaire was developed in Chang et al.'s (2001) study of an on-line mutual support group for Asian-American students. It consists of nine items and has three sub-scales: support (two items), relevance (three items), and comfort-connection (three items). These respectively aim to measure the extent to which participants felt supported by other group members, the degree to which participants felt the issues discussed were relevant to them, and how comfortable the participants felt in raising their concerns and whether there was a perceived connection with other group members. There is an additional question asking whether participants preferred being anonymous to using their real name. The questionnaire also contains open-ended questions asking for the participants' feedback on their experience of the group.

Chang et al. (2001) report good internal consistency with Cronbach's alpha of .84, .77, and .82 for the support, relevance, and comfort-connection sub-scales respectively. However, they also report very similar means and standard deviations for all items on the questionnaire and as correlations are not reported and numbers

were too low for factor analysis, one may wonder whether all the items are loading onto a single factor related to overall satisfaction with the group.

Face validity for the items in the support and relevance sub-scales is good (see questionnaire in Appendix 9). However, it is less clear what the comfort-connection sub-scale is measuring combining, as it does, feeling comfortable raising topics, feeling a connection with other members, and being satisfied with being part of the group. If all of the sub-scale items are taken together, they have good face validity as a measure of overall satisfaction with the group.

Despite the reservations expressed above, it was felt that the questionnaire would provide useful data about participants' overall satisfaction with the group.

The results from this study suggested that the first seven questions (i.e. all of those apart from that about anonymity, see Appendix 9) might well be measuring the same construct as Cronbach's alpha was found to be very high ($\alpha = .95$) and so the scale was used as an overall measure of level of support felt and satisfaction with the group. The question about whether the participants preferred being anonymous to using their real names was not included in the overall measure, as it was addressing an issue that at face value seemed qualitatively different from the other questions and including it reduced the level of Cronbach's alpha.

For the open-ended questions in both the Client Satisfaction Questionnaire and the On-line Support Group Questionnaire, basic thematic analyses (Willig, 2001) were conducted in which points in each participant's feedback were summarised and then themes drawn out from the summarised data.

## Process and Content Measures

*Monitoring of Websites and Mutual Support Group*

A website tracking service (www.hitmatic.com) was used to monitor the number of times each page in both of the sites was accessed. The on-line mutual support group was monitored more closely with details of each participant's use of the group being logged. Details of whenever participants accessed the group were recorded. This allowed monitoring of 'lurkers', i.e. those who read messages but do not post any themselves. The times of the day of visits were also collected.

*Support Group Process and Content Analyses*

Processes in the discussion board messages were coded in a similar manner to that used by Klaw et al. (2000). However, the codes for Humour and Group Feedback (Tracking) that were used by Klaw et al. were not included due to extremely low frequencies and consequent difficulties in achieving acceptable reliability.

Posts before the commencement of the randomised phase of the study were not coded. Thirteen posts from the trainee clinical psychologists who had been asked to test the board initially during the testing phase were not included in the coding. However, posts from the psychology undergraduates who continued to use the board were coded as it was felt that not to do so would be to misrepresent the content of the board and they were part of the study's target group. Posts added after the randomised phase of the trial (when participants in the Information Only condition were told about and given access to the support group) were not coded.

All posts were coded for the presence or absence of each of the process codes. Two independent raters coded the posts. Cohen's kappa was used as a measure of inter-rater reliability corrected for chance agreement. Inter-rater reliability was found to be moderate to good (see Table 1). Percentage agreement levels were similar to those of Klaw et al. (2000), who quote between 74% and 100%, although in their paper they do not give kappa values. Final coding of posts was determined by averaging the codings of the two raters.

*Table 1*

*Process coding reliability*

| Process codes | Level of rater agreement | |
| --- | --- | --- |
| | Percentage agreement | Cohen's kappa |
| Emotional Support (e.g. empathy and encouragement) | | |
| provide | 88 | .67 |
| request | 95 | .54 |
| Information or advice (e.g. facts, references, tips for action) | | |
| provide | 87 | .76 |
| request | 94 | .73 |
| Self-disclosure (e.g. "I" statements about past and current life situations and levels of coping) | | |
| provide | 96 | .90 |
| request | 90 | .61 |
| Group feedback (comments on relationships within the group) | | |
| appreciation | 100 | 1.0 |
| negative feedback | 100 | 1.0 |

Coding of the content of the posts was carried out by initially undertaking a basic thematic analysis, in a similar manner to that described above for the open-ended feedback questions. The thematic analysis was then used to derive content codes. Each posting was then coded for the presence or absence of the content code in a similar manner to that described for the process coding. An independent rater coded 40% of the posts in order to check reliability of the ratings (see Table 2).

*Table 2*

*Content coding reliability*

| Content codes | Level of rater agreement | |
| --- | --- | --- |
| | Percentage agreement | Cohen's kappa |
| Procrastination/ Study difficulties | 95 | .87 |
| Employment worries | 95 | .83 |
| Financial worries | 100 | |
| Interpersonal problems | 95 | .83 |
| Existential concerns (e.g. the meaning of life) | 90 | .46 |
| Depression or sadness | 95 | .83 |
| Anxiety | 95 | .64 |
| Worries related to eating | 95 | .86 |

# CHAPTER THREE

# RESULTS

## OVERVIEW

The first sections of the chapter look at participant characteristics on recruitment and check for differences between the randomised conditions. The next section looks at the relationships between the measures and the possibility of biases due to differential drop out. The preliminary research questions and the main hypotheses of the study are then examined.

## INITIAL ANALYSES

### Data Screening

Prior to analysis the distribution of all variables was examined. Possibly as a result of the large sample, all variables had a good approximation to a normal distribution and there were no significant outliers.

### Participant Characteristics

*Group Comparisons at Recruitment*

In order to check that the random assignment had produced equivalent groups, the Information Only and Support Group conditions were compared for pre-test differences. No significant differences found between the two groups (see Table 3).

*Table 3*

*Participant characteristics on recruitment, by study condition*

| | Support Group Condition (n = 142) | Information Only Condition (n = 141) | Statistic |
|---|---|---|---|
| **Gender** | | | |
| Male | 44 (31%) | 41 (29%) | $\chi^2(1) = .12$ p = .73 |
| Female | 98 (69%) | 100 (71%) | |
| | | | |
| Age in years M (SD, range) | 22.7 (4.73, 18–44) | 23.2 (5.85, 18–56) | t(280) = .69 p = .49 |
| | | | |
| <u>Ethnicity</u> | | | |
| Asian | 13 (9%) | 16 (11%) | $\chi^2(4) = 3.61$ p = .46[a] |
| Black | 2 (1%) | 3 (2%) | |
| White | 104 (73%) | 98 (70%) | |
| Chinese | 8 (6%) | 11 (8%) | |
| Mixed | 8 (6%) | 4 (3%) | |
| Other | 5 (4%) | 9 (6%) | |
| | | | |
| Did not reply | 2 (1%) | 0 | |
| | | | |
| <u>Internet use</u> | | | |
| On-line hours/week M (SD, range) | 11.7 (12.98, 1-100) | 12.3 (12.46, 1-80) | t(280) = .35 p = .73 |
| | | | |
| Use of internet discussion boards   yes | 17 (12%) | 17 (12%) | $\chi^2(1) = .00$ p = .98 |
|   no | 125 (88%) | 124 (88%) | |
| <u>Contact with mental health services</u> | | | |
| | | | |
| In the past   yes | 36 (25%) | 36 (25%) | $\chi^2(1) = .36$ p = .55 |
|   no | 82 (58%) | 69 (49%) | |
| | | | |
| Did not reply | 24 (17%) | 36 (26%) | |
| | | | |
| At present   yes | 13 (9%) | 10 (7%) | $\chi^2(1) = .06$ p = .80 |
|   no | 107(75%) | 92 (65%) | |
| | | | |
| Did not reply | 22 (15%) | 39 (28%) | |
| <u>CORE</u> | | | |
| Well-being M (SD) | 1.58 (.89) | 1.68 (.89) | t(281) = .94 p = .35 |
| Problems M (SD) | 1.60 (.78) | 1.67 (.79) | t(280) = .78 p = .43 |
| Functioning M (SD) | 1.31 (.68) | 1.40 (.66) | t(280) = .98 p = .33 |
| Risk M (SD) | .19 (.36) | .19 (.33) | t(280) = .06 p = .95 |
| Total M (SD) | 1.25 (.62) | 1.31 (.60) | t(280) = .91 p = .37 |
| No. of clinical cases as determined by CORE total (% of group) | 79 (56%) | 66 (47%) | $\chi^2(1) = 2.40$ p = .12 |
| | | | |
| <u>Satisfaction with life</u> | | | |
| Total – M (SD) | 20.29 (7.2) | 19.54 (6.7) | t(280) = .85 p = .40 |
| | | | |
| <u>Sense of Community with UCL</u> | | | |
| Total – M (SD) | 2.81 (.36) | 2.84 (.35) | t(279) = .65 p = .52 |

[a] Those who answered 'Black' were recoded to 'Other' during statistical testing due to low numbers.

## Relationships Between Measures

Satisfaction with Life, Sense of Community and total CORE score were correlated at both pre-test and post-test time-points (see Table 4). Highest inter-measure correlations at a single time-point were between Satisfaction with Life and CORE scores. It would be expected that satisfaction with life and level of psychological distress would be associated. However, correlation levels were not so high that it might be suspected that the same construct is being measured by the two scales. Sense of Community showed moderate correlation with the other two measures at both time-points.

*Table 4*

*Correlations between measures*

|  | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|
| 1 Satisfaction with Life (pre-test) | .22** | -.64** | .72** | .16 | -.51** |
| 2 Sense of Community (pre-test) | -- | -.25** | .23** | .73** | -.14 |
| 3 CORE total (pre-test) |  | -- | -.52** | -.21* | .69** |
| 4 Satisfaction with Life (post-test) |  |  | -- | .28** | -.57** |
| 5 Sense of Community (post-test) |  |  |  | -- | -.26** |
| 6 CORE total (post-test) |  |  |  |  | -- |

## Characteristics of Those Who Returned the Post-Test Questionnaire

Of the initial participants, 133 (47%) returned the post-test questionnaire, comprising 82 (58%) of those in the Information Only condition and 51 (36%) of those in the Support Group condition.

In order to investigate whether there might be systematic differences on the measures being used between those who did and did not return the second questionnaire, t-tests were performed comparing returners and non-returners on pre-test measures. No significant differences were found between those who did and did not return the second questionnaire (see Table 5).

*Table 5*

*Comparisons of those who did and did not return post-test questionnaires*

| | Returned post-questionnaire (n = 133) M (SD) | Did not return post-questionnaire (n = 149) M (SD) | t(280) | p |
|---|---|---|---|---|
| Satisfaction with Life | 20.0 (7.3) | 20.0 (6.8) | .04 | .97 |
| Sense of Community | 2.8 (.3) | 2.8 (.4) | 1.0 | .31 |
| CORE total | 1.4 (.7) | 1.6 (.7) | 1.16 | .25 |

# INVESTIGATING THE PRELIMINARY RESEARCH QUESTIONS

## 1) Will Students with High Levels of Psychological Distress Make Use of On-line Psychological Advice and On-line Mutual Support?

In order to investigate this question, the levels of psychological distress in those joining the study were assessed. Further, levels and patterns of use of the on-line advice pages were examined. For those in the Support Group condition patterns and levels of use of the support group were also investigated.

*Pre-test Levels of Psychological Distress*

Pre-test CORE scores for all participants were compared with normative data for a non-clinical population (CORE System Group, 1998). The mean scores of the participants in this study were found to be significantly higher than population norms on all sub-scales apart from that assessing levels of risk (see Table 6)

The number of those scoring above clinical cut-off points on the pre-test CORE total was 137 (48.4%).

*Table 6*

*Participant levels of pre-test CORE scores compared to normative data*

| | Sample | Male (n =85) Norm (non-clinical) | Statistic | Sample | Female (n =198) Norm (non-clinical) | Statistic |
|---|---|---|---|---|---|---|
| Well-being M (SD) | 1.43 (.90) | .68 (.71) | z=7.28, p< .001 | 1.72 (.88) | 1.10 (.87) | z=8.58, p< .001 |
| Problems M (SD) | 1.53 (.80) | .78 (.64) | z=8.18, p< .001 | 1.68 (.78) | 1.00 (.76) | z=10.65, p< .001 |
| Functioning M (SD) | 1.27 (.65) | .83 (.62) | z=5.78, p< .001 | 1.72 (.68) | .86 (.67) | z=15.41, p< .001 |
| Risk M (SD) | .17 (.32) | .23 (.47) | z=1.46, p< .14 | .19 (.36) | .15 (.40) | z=1.31, p< .19 |
| Total – M (SD) | 1.19 (.60) | .69 (.53) | z=7.19, p< .001 | 1.32 (.61) | .81 (.61) | z=10.15, p< .001 |

Note: All the CORE sub-scales are coded such that higher scores indicate greater levels of problems.

*Use of the On-line Advice Pages*

Over the ten week period of the RCT, the advice pages were looked at a total of 1,204 times (see Table 8, below). See below, under the section covering the issues of concern to students (preliminary research question 2) for further details of the advice pages looked at by the participants. This gives a mean level of usage of 4.3 pages per participant. No figures are available for individual usage, so the standard deviation cannot be ascertained.

*Use of the Support Group*

Of 142 people in the Support Group condition, 58 (41% of total in condition) accessed the support group; 37 (64% of support group users) read messages on the support group but did not post anything ('lurkers' in internet terminology); 19 (33%

of support group users) posted messages and 2 (3% of support group users) only looked at the message titles not the content of the messages.

For the purpose of analysis, times of accessing the support group were grouped into one of six four hour time slots: 9am to 1pm, 1pm to 5pm, 5pm to 9pm, 9pm to 1am, 1am to 5am, and 5am to 9am. As can be seen from Table 7, 48% of activity took place from 9am to 5pm, 42% from 5pm to 1am, and 10% from 1am to 9am.

Table 7

*Times of day support group accessed*

| | 9am to 1pm | 1pm to 5pm | 5pm to 9pm | 9pm to 1am | 1am to 5am | 5am to 9am |
|---|---|---|---|---|---|---|
| | 60 (28%) | 43 (20%) | 45 (21%) | 45 (21%) | 11 (5%) | 11 (5%) |

The results summarised in Table 13 (p. 78) looking at the relationships of level of support group use with pre-test scores and demographic information are also relevant to this question. Those who had been in contact with mental health services in the past were found to use the support group significantly more than those who had not. Level of support group use was also found to be negatively correlated with pre-test levels of psychological well being, as measured by the Satisfaction with Life scale.

## 2) What Concerns do Students Address Using the Advice Pages and Mutual Support Group?

The nature of students' main concerns was investigated through looking both at the on-line advice pages that they accessed and at the content of the discussion in the mutual support group.

*Concerns Addressed Using the Advice Pages*

The web pages with details of other support services and those with advice about procrastination were the most frequently accessed pages in both conditions. The next most accessed pages by those in the Information Only condition were on work block, concentration and depression and by those in the Support Group condition were depression, work block, and loneliness (in those orders respectively). The nine most accessed pages were the same in both conditions; these were the pages already mentioned with the addition of the pages on examinations, anxiety, and self-esteem (see Table 8).

Those in the Information Only condition looked at the advice pages significantly more than those in the Support Group condition (Binomial test, $p < .001$). Spearman's rank correlations were used to see if the pattern of page accesses was similar in the two conditions; they were found to be significantly correlated ($r_s(19) = .88$, $p < .001$).

Overall, therefore, the patterns of advice page use in the two experimental conditions were similar but the advice pages were consulted more often by those in the Information Only condition than those in the Support Group condition.

*Table 8*

*Patterns of advice page use*

| Advice Page | Number of times page accessed | | |
|---|---|---|---|
| | Information Only | Support Group | Totals |
| Support Services' Details | 129 | 79 | 208 |
| Procrastination | 75 | 57 | 132 |
| Work Block | 72 | 28 | 100 |
| Depression | 63 | 35 | 98 |
| Concentration | 67 | 25 | 92 |
| Examinations | 62 | 21 | 83 |
| Loneliness | 42 | 27 | 69 |
| Anxiety | 47 | 18 | 65 |
| Self-Esteem | 40 | 21 | 61 |
| Sexuality | 27 | 18 | 45 |
| Eating Disorders | 31 | 13 | 44 |
| Relaxation | 24 | 8 | 32 |
| Anger | 18 | 7 | 25 |
| Self-Injury | 17 | 8 | 25 |
| Insomnia | 17 | 5 | 22 |
| Homesickness | 15 | 6 | 21 |
| Traumatic stress | 14 | 7 | 21 |
| Bereavement | 11 | 10 | 21 |
| Alcohol & Drugs | 18 | 1 | 19 |
| Phobias | 6 | 7 | 13 |
| Parental Divorce | 5 | 3 | 8 |
| **Total number of accesses** | **800** | **404** | **1204** |

*Concerns Addressed in the Mutual Support Group*

The content of the postings to the support group were coded. Problems relating to

study and interpersonal difficulties were the two most recorded categories, followed

by depression/sadness, eating worries and employment worries (see Table 9).

*Table 9*

*Content of support group messages*

| Content codes | Percentage of messages containing content |
|---|---|
| Studying difficulties (e.g. procrastination, too much to do) | 29 |
| Interpersonal problems/worries | 29 |
| Depression/sadness | 19 |
| Eating worries | 17 |
| Employment worries | 15 |
| Worries about pointlessness/meaning of life | 8 |
| Anxiety | 8 |
| Financial worries | 4 |

Note: Each message can be coded under more than one content coding, hence totals of 'Percentage of messages containing content' total more than 100.

## 3) What Processes Occurred in the On-line Support Group?

The postings in the support group were coded using a similar system to that used by

Klaw et al. (2000). This allowed comparison with the results of their study and with

those of Winzelberg (1997) and of Salem et al. (1997), from which Klaw et al. had

adapted their coding system. Table 10 shows the frequency of occurrence of processes coded.

*Table 10*

*Processes analysis of postings to the mutual support group*

| Process codes | Number of occurrences |
|---|---|
| Emotional Support (e.g. empathy and encouragement) | |
|     provide | 12 |
|     request | 3.5 |
| Information or advice (e.g. facts, references, tips for action) | |
|     provide | 23 |
|     request | 6.5 |
| Self-disclosure (e.g. "I" statements about past and current life situations and levels of coping) | |
|     provide | 35 |
|     request | 7.5 |
| Group feedback (comments on relationships within the group) | |
|     appreciation | 6 |
|     negative feedback | 0 |

Following Klaw et al. (2000), frequencies were converted into rank order data to allow comparison with Winzelberg (1997). Winzelberg had used a coding system in which one post could only have one code, in contrast to the system used by this study and those of Klaw et al. and by Salem et al. (1997), in which several different codes could apply to the same post (see Table 11).

*Table 11*

*Ranks of relative frequency of process codes in four studies of on-line mutual support*

*groups*

| | Provide self-disclosure | Provide information or advice | Provide emotional support | Request self-disclosure | Request information or advice | Request emotional support |
|---|---|---|---|---|---|---|
| This study | 1 (71%) | 2 (47%) | 3 (24%) | 4 (15%) | 5 (13%) | 6 (7%) |
| Klaw et al. (2000) | 1 (66%) | 2 (37%) | 3 (29%) | 5 (7%) | 4 (15%) | 6 (3%) |
| Winzelberg (1997) | 1 | 2 | 3 | 5 | 4 | 6 |
| Salem et al. (1997) | 1 (51%) | 2 (34%) | 3 (22%) | * | * | * |

Notes: 1 = most frequent, 6 = least frequent.

   * no process coding category of this type in this study (Klaw et al include a category of 'request info or advice' for Salem et al. but a reading of their paper suggests that their category of 'request for help' does not easily map onto any of the 'request..' categories used in this study or in that of Klaw et al.)

   Percentages are numbers of posts containing category as a percentage of total posts (one post can have several process codes). These are not included for Winzelberg et al. due to differences in coding making only rank data meaningful.

*Examples of Process Coding*

*Provide self-disclosure.* Self-disclosure was defined as statements where the writer was giving information about themselves, their past and present life, their feelings and opinions. This was the most used code (71% of posts). Self-disclosure generally related to the central problem of the conversation thread of which it was a part. It could be part of the provision of advice or emotional support but often served as part of a request for support.

> "Hiya all. I was wondering if anyone felt like me, or could help me. I'm a first year UG. my course is really hard and I just don't know why I'm bothering. with anything. I've felt like this for a couple of years and it's

really beginning to eat me up. it comes and goes, but I can't afford it now with exams. The thing is nothing really matters."

*Provide information or advice.* This was the next most common coding of support group posts (47%).

"If you're feeling down, treat yourself! Why not? Don't wait for others to, just focus on the things you like doing. What do you really like doing or what are you interested in? Try and do more of that stuff and less of stuff you don't like. It may sound simple, cos of course we all have to do loads of things we dont like all the time; exams and stuff, but if your filling the rest of your time with cool, fun stuff, it sort of sweetens the pill and might help you look at things from a different perspective."

The information and advice provided would often be on the basis of the experience of the writer.

"I know it's hard, but my advice would be: find a job that would be good experience if you can, and it'll pay off. For me, because I was 20 at the time, it also made me mature faster and take things more seriously, realising their value."

*Provide emotional support.* Emotional support was coded as present in 24% of the posts.

"Hi, you seem really sad. Hope you're feeling a bit better than when you posted your message."

"Really hope you get somewhere and the situation changes. I know how horrible it can be living with something like this and not feeling able to say anything. It sounds silly but it ends up affecting a lot more of your life than you think. Good luck!"

*Request self-disclosure.* Requests for others to disclose information about themselves were present in 15% of the posts. They often overlapped with requests for emotional support or for advice and information.

"I was wondering if anyone else has the same problem as me, and if anyone has any good tips to avoid the problem."

"I was simply wondering if anyone else has dealt with the mortality issue before or had any thoughts on what I've been dealing with."

*Request information or advice.* This code occurred in 13% of posts.

"Anyone else having problems with procrastination? Anyone tried any methods that *really* helped?"

*Request emotional support.* This code occurred in 7% of posts and often overlapped with self-disclosure and requests for self-disclosure.

"Anyone have any advice or kind words for a heartbroken girl? My long-term boyfriend has just dispatched with me in a very cruel manner. Now I see nothing but endless solitude before me..."

"Hiya all. I was wondering if anyone felt like me, or could help me. I'm a first year UG. my course is really hard and i just don't know why I'm bothering. with anything."

*Group feedback (appreciation).* This code occurred in 12% of the messages and generally referred to the writer thanking a particular person for a reply, but also sometimes occurred as a more general appreciation of the replies or the group.

"Hi, thanks for replying to my posting. I am glad to hear that you survived it all and can tell the tale as a postgraduate."

"That's a really good idea and I wish I had known this is September! I will definitely try it next year! I think I am going to be living with 3 workaholics next year, rather than in distracting halls, so here's hoping for a positive influence."

"Thanks to this page I ... realised that I'm not alone and that my predicament is actually defined as procrastination."

## TESTING THE MAIN HYPOTHESES

## 1) Differences in Outcome Between the Two Experimental Conditions

Hypothesis 1 stated that relative to students in the Information Only condition those in the Support Group condition will, at post-test, have: a) lower levels of psychological distress, b) higher levels of psychological well being, c) a greater sense of being part of the university community.

Table 12

*Outcome measures by condition*

| Measure | Pre M (SD) | Post M (SD) |
|---|---|---|
| CORE Total | | |
| Information Only Condition (n = 82) | 1.31 (.64) | 1.04 (.64) |
| Support Group Condition (n = 51) | 1.13 (.60) | .91 (.47) |
| Satisfaction with Life Scale | | |
| Information Only Condition (n = 80) | 19.36 (7.28) | 22.02 (7.13) |
| Support Group Condition (n = 51) | 20.74 (7.29) | 21.94 (6.84) |
| Sense of Community Index | | |
| Information Only Condition (n = 82) | 2.86 (.33) | 2.86 (.35) |
| Support Group Condition (n = 51) | 2.82 (.38) | 2.87 (.38) |

Note: Pre measures have only been included for those who also completed post measures. Values of pre measures including all participants can be found in Table 3.

Change over time and between the Information Only and Support Group conditions was assessed using repeated measures ANOVAs.

a) Total CORE scores changed across time (see Table 12), with participants tending to show lower levels of psychological distress on post-test measures $(F(1,131) = 31.71$, p< .001). However there were no significant differences between the conditions $(F(1,131) = 2.61$, p= .11) or condition by time interaction effects $(F(1,131) = .29$, p= .59).

b) Levels of psychological well being were assessed with the Satisfaction with Life scale. Scores increased over time $(F(1,129) = 16.67$, p< .001), indicating increased satisfaction with life (see Table 12). However, there were no significant differences between the conditions $(F(1,129) = .30$, p= .59) or condition by time interaction effects $(F(1,129) = 2.41$, p= .12).

c) The Sense of Community Index was used to assess participants' sense of being part of the university community. Scores on this scale did not show significant changes either across time $(F(1,131) = 1.25$, p= .26) or between conditions $(F(1,131) = .07$, p= .78). There were no significant condition by time interaction effects $(F(1,131) = .95$, p= .33). Table 12 shows mean levels of Sense of Community index at pre and post-test.

## 2) Differences in Outcome Related to Level of Support Group Use

Hypothesis 2 stated that for students in the Support Group condition, those who made greater use of the support group would receive greater benefit.

To test this hypothesis, characteristics associated with increased support group use were first investigated. Characteristics that were found to be related to the level of use of the support group were then taken into account when investigating post-test outcomes.

*Investigating Characteristics Associated with Increased Support Group Use*

Analyses were conducted in order to investigate whether, for those in the Support Group condition and who used the support group, there were relationships between level of use and demographic information or pre-test scores. Due to the non-normal distribution of support group use non-parametric tests were used.

As can be seen from Table 13, for support group users pre-test Satisfaction with Life was found to be negatively associated with level of support group use. Neither pre-test Sense of Community nor CORE total was significantly associated with level of support group use, although the CORE score had a tendency towards an association. Neither age, gender nor ethnicity were found to be significantly related to level of support group use, although there was a tendency for women to use the support group more than men. Those who had past contact with mental health services used the support group more than those who had not. No difference was found between those in current contact with mental health service and those not in current contact.

In light of the earlier finding that a disproportionate number of women joined the study, a Chi Square test was performed to see whether there were further discrepancies in the proportions of woman to men who actually used the support group. No significant differences in gender distribution were found between those who did not use the group, those who used the group once and those who used it more than once ($\chi^2(2) = .49$  $p = .78$).

*Table 13*

*Relationships of level of support group use with pre-test scores and demographic information (for those that used the support group)*

|  |  |  |  | Statistic |  | Test |
|---|---|---|---|---|---|---|
| Satisfaction with Life Scale (pre-test) |  |  |  | $r(53) = -.29$ | $p = .03$ | Spearman's |
| Sense of Community Index (pre-test) |  |  |  | $r(53) = .02$ | $p = .87$ | Spearman's |
| CORE totals (pre-test) |  |  |  | $r(53) = .23$ | $p = .09$ | Spearman's |
| Age |  |  |  | $r(54) = .20$ | $p = .14$ | Spearman's |
| Contact with mental health services |  |  |  |  |  |  |
| Past |  |  |  | $U = 208, z = 2.2$ | $p = .03$ | Mann-Whitney |
| contact | $n = 21$ | $M = 6.6$ | $SD = 10.8$ |  |  |  |
| no contact | $n = 30$ | $M = 1.9$ | $SD = 1.9$ |  |  |  |
| Present |  |  |  | $U = 141, z = 1.0$ | $p = .30$ | Mann-Whitney |
| contact | $n = 8$ | $M = 7.5$ | $SD = 9.4$ |  |  |  |
| no contact | $n = 45$ | $M = 3.2$ | $SD = 6.7$ |  |  |  |
| Gender |  |  |  | $U = 283, z = 1.7$ | $p = .08$ | Mann-Whitney |
| Female | $n = 38$ | $M = 3.9$ | $SD = 7.4$ |  |  |  |
| Male | $n = 20$ | $M = 3.2$ | $SD = 6.3$ |  |  |  |
| Ethnicity |  |  |  | $\chi^2(4) = 2.70$ | $p = .61$ | Kruskall-Wallis |

Notes: n was between 50 and 56 for tests
   Level of support group use was measured in number of sessions (4 hour periods) during which the group was accessed, see section on pattern of group use, below, for further details.

*Relationship of Support Group Use to Outcome*

In order to investigate whether level of group use was related to outcome, stepwise linear regressions were performed with each outcome measure. In order to control for factors already known to influence level of group use (see above), pre-test Satisfaction with Life scores and whether they had been in past contact with mental health services were entered on the first step; pre-test scores on the outcome measure being investigated were also entered on the first step. Level of group use was entered on the second step and change in amount of variance accounted for between the two steps was noted. Level of group usage was not found to significantly influence post-test Satisfaction with Life (change in $R^2$ = .05, $F(1,40)$ = 3.6, p = .06; Overall model $F(3,40)$ = 10.9, p < .001), nor post-test CORE score (change in $R^2$ = .00, $F(1,38)$ = 3.6, p = .95; Overall model $F(4,38)$ = 8.5, p < .001), nor Sense of Community (change in $R^2$ = .00, $F(1,39)$ = .001, p = .97; Overall model $F(4,40)$ = 28.3, p < .001).

## INVESTIGATING THE SUBSIDIARY RESEARCH QUESTION

### 1) Students' Opinions of the Sites

The participants' opinions of the on-line support were assessed quantitatively using the scales of the Client Satisfaction Questionnaire (for both conditions) and the On-line Support Group Questionnaire (for the Support Group condition only). A qualitative assessment was also made using open-ended questions.

*Quantitative Assessment*

*Client Satisfaction Questionnaire (CSQ).* Scores on the three items of the CSQ were combined to give an overall satisfaction score with a possible range from 0 to 9, with higher scores showing greater levels of satisfaction. Mean score for the Support Group condition was 5.1 (SD = 1.6, n = 48) and for the Information Only condition was 5.0 (SD = 2.0, n = 78), indicating, for both conditions, mean scores just into the satisfied half of the scale. As would be expected from a visual inspection of these scores, there were no significant differences between the conditions (t(124) = .35, p = .73).

In order to investigate whether other factors as well as participants' views of the site might be influencing scores on the CSQ, a series of correlations were performed with the other outcome measures. It was anticipated that contact with mental health services and gender might influence the level of satisfaction with the site. Scores on the CSQ were found to be positively associated with post-test Satisfaction with Life (r(122) = .33, p < .001), negatively associated with psychological distress, as measured by the post-test CORE score (r(124) = -.36, p < .001), and negatively associated with post-test score on the Sense of Community with their University (r(124) = .312, p < .001). No significant difference in CSQ score was found between men and women. However, those with past contact with mental health services and with present contact with mental health services were found to have significantly lower satisfaction with the website (see Table 14).

*Table 14*

*Client Satisfaction Questionnaire scores: comparisons across mental health service contact and gender*

| | | CSQ score M (SD) | Statistic |
|---|---|---|---|
| **Contact with mental health services** | | | |
| In the past | yes | 4.5 (1.6) | t(98) = 2.5, p = .01 |
| | no | 5.4 (1.9) | |
| At present | yes | 3.6 (1.1) | t(99) = 3.0, p = .004 |
| · | no | 5.2 (1.9) | |
| Gender | | | |
| | female | 4.9 (1.8) | t(124) = 1.7, p = .09 |
| | male | 5.4 (1.8) | |

*On-line support group questionnaire.* Those in the Support Group condition were asked to complete the On-line Support Group Questionnaire. 44 participants completed this questionnaire, 31 of whom had used the support group. Of these 31, 16 had posted messages and 15 had only read messages.

With a possible range from 1 to 7 (higher scores indicating greater satisfaction), the mean total score of the questions relating to satisfaction with the on-line group was 3.6 (SD = 1.6), indicating a moderate level of satisfaction, marginally tending towards lower levels, but with relatively high variations of opinion among the participants. Those who had posted to the support group (M = 4.5, SD = 1.5) were found to have significantly higher scores than those who had only read messages (M = 2.7, SD = 1.4; t(29) = 3.5, p = .004). However, there were no significant

differences between the scores of those who had used the support group several times (M = 3.8, SD = 1.7) compared to those who had used it only once (M = 3.3, SD = 1.8; t(29) = .80, p = .43).

The last question asked whether the participants liked being able to be anonymous. The mean for this question was 4.7 (SD = 2.1) indicating a moderate preference for anonymity.

*Qualitative assessment*

The qualitative assessment was made using the participants' replies to the open ended questions in the post-test questionnaire. Three of the questions were included for participants in both experimental conditions. These asked what the participants liked and disliked about the website and requested suggestions for improvements. One open ended question was only asked of those in the Support Group condition; it asked what participants thought of the support group. This question was part of the On-line Support Group Questionnaire.

*Students' opinions of the website as a whole.* On visual inspection, the responses to the open ended questions from those in the different experimental conditions were similar, the only notable difference being occasional references to the support group for those in the Support Group condition and comments about the lack of a support group or lack of interactivity for those in the Information Only condition. The themes from most of the feedback from both conditions have therefore been

summarised together and are taken as comments on the overall provision of a student support website. Comments that refer specifically to the mutual support group have been summarised separately.

*Summary of answers to the question "What did you like about the website?"* There were 95 responses to this question. Many of the respondents said that they had found the advice pages helpful:

> "there was good standard information on the types of 'normal' reactions to a variety of stressful experiences, which allows the reader to realise they're 'not crazy'";

> "the advice pages were a useful starting point, particularly as I have a friend who has been self-harming, and I didn't know what to do".

There were positive comments on the range of advice available. Other respondents commented on how they liked the design and layout of the site. Several respondents talked about the impact the site had had on them:

> "it explained things I had not known how to describe previously, and states of mind which I did not think I shared with others. By describing those states of mind and making suggestions on how to overcome them, the site was extremely useful and supportive";

> "it was good to just know that it was THERE, that if I had needed some help I could access it in a confidential way from home";

> "It made me think about solutions and I felt less of a 'failure' regarding the writing difficulties I've got in my thesis right now".

Several participants in the Information Only condition talked about how the advice pages made them feel that they were not alone and that they were cared for:

"I felt being cared. This is a good feeling. I should tell 'thank you'. 'cause once a time I was really isolated and depressed very much. And now I become reasonable happy. Thank you very much indeed".

*Summary of answers to the question "What didn't you like about the website?"*

There were 84 replies to this question. Several respondents replied that there was nothing they disliked about the site. Of those who did talk about what they disliked, many said that they could find the information elsewhere. Others commented negatively on the design and layout of the website:

> "fairly bland and depressing layout... not that pretty colours are going to be of enormous help to a depressed person."

A few people commented on the size of the website titles:

> "I didn't like accessing it from UCL computers as it's fairly obvious from the screen what you're doing and I don't want people to know!".

Several people commented on the advice pages being too basic. There were also comments about the lack of the opportunity to interact with a professional:

> " I didn't like that there was no direct access to a professional whom one could seek advice from. Just reading the description of your identified issues in advice pages is not enough."

> "It did all a website could, do, really. Most problems students face require personal interaction".

Participants in the Information Only condition commented on the non-interactive nature of the website:

"It wasn't as interactive as I'd expected it to be. I expected message boards, on-line workshops for issues such as revision, writing, etc. and it was all relatively static."

*Summary of answers to the question "Do you have any suggestions for improvements in the future?"* There were 76 replies to this question. Many of the replies were the single word "No", with one respondent replying "No, it was excellent. The whole project was a brilliant idea, I feel many students need that kind of support." Several people suggested that it would be helpful to be able to interact with a mental health professional or replied that it would be useful to have "contact emails to talk to someone " or that it would be useful to have "professional advice on hand". Another person said, "perhaps there could be a counsellor to chat to on-line, like there is in software and hardware technical support".

Several of the participants in the Information Only condition, suggested adding a message board or forum (ie. a support group). One respondent said,

"I belong to several on-line support groups and the most beneficial to me has been a message board... Clearly a website can't offer clinical help but for those of us who are paralysed with fear when asked to talk to a doctor or counsellor it is a very helpful middle ground."

*Students' opinions of the Mutual Support Group.* Below are summaries of the participants' answers to the open ended questions that related specifically to the mutual support group.

When asked about what they liked about the website, participants in the Support Group condition replied that it helped them to feel that they were not alone:

> "chance to see that others are also stressed in life!  Good advice from people";
> "I liked that I could find descriptions of the various issues that could weight down a student- to identify whether what I am feeling is indeed a sort of "problem" recognised by others too... Also liked that by reading other people's postings, I could related and think that yeah, I am not alone.. other people have trouble too and try to deal with it.  The feeling of support between each other was comforting and pleasant".

Another respondent said they liked, "the group therapy nature of it."  The feedback also mentioned the importance of anonymity:

> "it gave me a way to say what I felt, without having to really tell anyone.  I find it hard to say how I'm really feeling to people but the site allows me to be honest and get a response without telling anyone I know";

> "I loved the support group- it was great to talk to people with similar problems anonymously and this really helped me even when not directly taking part in discussions".

Another person liked the fact that it was, "confidential, lots of advice, talking to people experiencing the same."

When asked about what they disliked about the website, participants in the Support Group condition commented on the small numbers of people using the support group:

> "not enough people using it to build a proper community";

> "limited usage, but that will improve as more people hear about it, I hope!":

Two people commented on being upset by the support group:

> "I didn't like reading some of the responses that my post received. One was to the effect that my problem was inconsequential and that I should just forget about it and stop whining";

> "I often found the support pages very upsetting. I found it difficult to read about other people's problems".

A few people said that the issues raised in the support group were not relevant to them. One participant felt that there should be a professional active in the support group, "a professional should always be ... responding to every posting. It felt at times 'ok guys you have the problems, talk between you and sort it out, we will be watching but won't get involved." One respondent was worried about having to log in to the site, commenting that there was, "no way to withhold your ID."

When asked for suggestions for improvements, several of those in the Support Group condition mentioned that the site should be publicised more widely to increase levels of participation, for example, "send more reminders to people subscribed to remind them of the site and to contribute." Other respondents from the Support Group condition suggested the creation of 'special interest' support groups, for example, "something that would benefit me would be to get an informal 'writer's group' together with other postgrads who are struggling to complete their PhD write-up." Someone else suggested having separate groups for postgraduate and undergraduate students. One person was worried about using their University ID to log on, saying the "idea of putting in your own UCL ID could be daunting for some people. Is there not another way of doing a password entry?"

As well as commenting on the support group in answer to the general questions about the website (summarised above) as part of the On-line Support Group Questionnaire, the participants in the Support Group condition were asked what they thought of the support group and their suggestions for improvements were requested. Twenty two participants answered this question. A wide range of opinions were expressed in the written feedback. Several people said that they had not used the support group. Reasons for this were varied and included being "pushed for time", not feeling "comfortable talking to strangers through the internet" or feeling "more comfortable talking with friends after reading the advice pages". However, others said that, "it was very reassuring to know that it was there if I needed it." Some felt that they had, "little in common" with the group or that the issues discussed, "didn't reflect any of my concerns." Several people replied that they thought the support group would have been better if there had been more people involved and there had been more traffic on the site and shorter gaps between posts and replies. The main other improvement that people suggested was that there be, "professional advice available for those who needed it" or, "a spot for a counsellor to answer questions."

Several respondents mentioned that they found it helpful to see that there were people with the same problems as themselves and one person said, "I thought the support group was fantastic! It was so reassuring to talk to others with the same problems as me and to both give and receive advice."

# CHAPTER FOUR

# DISCUSSION

## OVERVIEW

This study set out to investigate the processes and outcomes of an on-line mutual support group for students at a major British university. The study aimed to investigate what characterised students who would be interested in on-line support and those who would make use of an on-line group. It was designed to test the hypothesis that those who participated in the on-line support group would show lower levels of psychological distress, higher levels of well-being and a greater feeling of being part of the community of the university than those who did not. It, further, aimed to investigate the processes of the on-line group and the concerns that students addressed using the on-line mutual help group and the on-line advice pages.

The study aimed both to advance understanding of on-line mutual support and to act as a formative evaluation, which would be of use to those wishing to set up on-line mutual support groups in the future.

This chapter will examine the findings of the study in light of the research questions and hypotheses it was designed to address, in the context of current thought in the area. It will then address both strengths and limitations of the study, areas of further research, and finally clinical implications.

# SUMMARY OF THE FINDINGS

## Preliminary Research Questions

*1)  Will Students with High Levels of Psychological Distress Be Receptive to*

*the Provision of On-line Psychological Advice and Support?*

The students who joined the study had higher levels of psychological distress than would be expected of a general population sample.  Although this is characteristic of students generally (e.g. Stewart-Brown et al., 2000), 48% of the students who showed their interest in on-line support by joining the study scored above the cut-off level for clinical levels of distress on the CORE.  This is considerably higher than the 'probable' clinical levels of anxiety found by Webb (1996) in a general student population.  It is, therefore, likely that students joining the study had higher levels of distress than would be expected of the general student population.  Although we cannot be certain of this without comparing the study's participants to the general student population, it seems likely that those expressing an interest in on-line support by joining the study had an over-representation of those with higher levels of distress.  This suggests that the type of approach to on-line psychological support taken in this study reaches at least a sub-section of those students that it is aimed at.

More female students were interested in on-line help than male, which did not reflect the more equal gender balance of the student population at the university.  It may be that this reflects higher levels of psychological distress amongst female students.  Although there are few studies that have investigated the relationship between gender

and psychological distress in students, Meltzer, Gill, Pettigrew, and Hinds (1995) report considerably higher levels of neurotic disorders amongst female 16-19 year olds than amongst their male counterparts and Grant (2002) reports that the Leicester University Psychological Health Project found higher levels of psychological distress amongst female than amongst male students. Grant also reports that female students were more likely to consult the counselling service than male students, this suggest that a greater tendency of female students to look for psychological help, compared to male students with similar levels of distress, may also have influenced the numbers of women joining this study.

The on-line advice pages were well used over the period of the study with, on average, each student accessing the pages four times. However, this figure may hide large variations in the number of times individual students used the advice pages. Of those that were in the Support Group condition around 40% used the mutual support group at least once. This suggests that students will use an on-line mutual support group, though it is likely to be used only by a proportion of those who have access to it. Both Chang et al. (2001) and Winzelberg et al. (2000), who investigated groups set up for their studies, report much higher levels of use by participants. However, these were both studies with a high level of professional involvement in the groups. In contrast to these studies, Dunham et al. (1998) deliberately tried to limit professional contact with the participants unless they requested it. Similarly to the present study, they found that the distribution of use of the support group was skewed, with just under a third of the group having high levels of posting and a large

proportion having low levels of participation and with many eventually stopping using the group. This pattern of use may be characteristic of naturally occurring on-line mutual support groups (Lieberman & Russo, 2002) in which participants choose the amount and level of participation that they find helpful (Humphreys & Rappaport, 1994).

It is of note that for those who used the support groups the level of use was associated with lower levels of initial satisfaction with life and also with previous contact with mental health services. Both of these findings may indicate that the on-line mutual support group is seen as potentially useful by those whom it is aimed at, students with higher levels of psychological dissatisfaction. Several authors (e.g. Davison et al., 2000; Klaw et al., 2000) have suggested that those who feel stigmatised in their community may be particularly likely to use on-line mutual help groups, where they can remain anonymous while discussing their problems. The over-representation of those with past contact with mental health services may also be related to a fear of stigmatisation amongst this group of students for whom an anonymous source of support may be particularly attractive.

It is also notable that in accord with other studies of on-line mutual support groups (e.g. Winzelberg, 1997), much of the activity of the group took place outside of working hours, some in the early hours of the morning. Group members were taking advantage of one of the particular characteristics of on-line groups, that they are available whenever one is able or feels the need to use them.

The results of this study, therefore, suggested that at least some students with levels of psychological distress higher than that expected in the general student population are receptive to the provision of on-line psychological support through advice pages. They also suggest that a certain sub-section of these students will make use of an on-line mutual support group and that these are likely to be those with greater levels of dissatisfaction with life and those who have previously been in touch with mental health services.

## 2) What Issues of Concern Do Students Address Using the Advice Pages and the Support Group?

The concerns addressed most frequently by students, both using the on-line advice pages and in the mutual support group, were related to difficulties in studying such as procrastination, or difficulty in managing the work expected of them. This is in accord with other studies of student mental health (Monk, 1999; Stewart-Brown et al., 2000) that have found that worries about study were amongst those most related to psychological difficulties. Both of these studies found that financial worries were also highly associated with psychological difficulties. There was no on-line advice page specifically related to financial difficulties, there was some discussion of employment and money worries in the mutual support group, although this was not one of the main topics of discussion.

Of the on-line advice pages specifically related to psychological problems, the one devoted to depression was the most frequently accessed. Depression or sadness was the second most discussed psychological problem in the support group.

In the support group interpersonal problems were discussed at the same, highest, level as worries relating to study. There was no on-line advice page exactly corresponding to this topic but the page relating to loneliness was looked at relatively frequently (seventh out of the twenty advice pages).

It should be noted that while the patterns of advice page consultation were similar in the two experimental conditions, the level of usage was significantly different. Those in the Information Only condition looked at the advice page twice as much as those in the Support Group condition. The explanation for this is not immediately obvious. It could be that those who had access to the support group used the group instead of consulting the advice pages, hence the lower access levels. However, other explanations should be considered. For example, there may have been something about having a mutual support group as part of the site that put people off using the advice pages.

## 3) What Processes Occur in the On-line Support Group?

The findings from this study support the presence of several of the factors thought to be therapeutic in face-to-face groups. In particular, personal disclosure, social support, the use of experiential knowledge, and universality.

Personal disclosure has been suggested as an important therapeutic factor (Yalom, 1995; Pennebaker & Seagal, 1999) and this study supported the findings of other studies of both naturally occurring mutual help groups (Klaw et al., 2000; Winzelberg, 1997; Salem et al., 1997) and groups set up for research purposes (Dunham et al., 1998; Chang et al., 2001), that there are high levels of self-disclosure in on-line mutual help groups.

Social support is another factor associated with psychological well being (e.g. Brown et al., 1986). This study found, in common with other studies of on-line mutual help groups (Klaw et al., 2000; Winzelberg, 1997; Salem et al., 1997), that there were high levels of support in the postings to the group. Over half of the messages in the group contained informational or emotional support, both of these types of support having been theorised as important aspects of social support (Hogan et al., 2002). In the qualitative feedback group members also commented positively on the support and advice provided by other members of the group, although a few said that they had not appreciated some of the replies they received. The fact that there was a high proportion of support provided within the group suggests that the 'helper-therapy' principle, in which the giving of help works therapeutically on the giver (Reissman, 1965) had the opportunity to function, although data were not specifically collected to investigate this factor.

Much of the provision of information or advice was on the basis of the experiential knowledge (Borkman, 1999) of the writer, suggesting the possibility of the presence of some of the empowering processes that Borkman and Madara (2000) discuss. However, when thinking about the factors of experiential knowledge and of empowerment, some of the open-ended feedback of participants should be borne in mind. Some support group members clearly would have liked more involvement by a mental health professional, one participant suggested that a counsellor should answer questions in the group, another said that it felt like they were being left to their own devices and that they were being watched but that the researchers/university would not actually get involved.

A few people also expressed disquiet about having to log on to the site with their university user name. This was an area in which the group set up for this study differed from naturally occurring groups. The participants knew that they were part of a study and that although they were anonymous to other group members, they had to log in using their university user name and so there was the potential of their anonymity being broken. Having been obliged to fill in questionnaires, the necessity of logging on and the lack of interaction from the researcher/group moderator may have contributed towards the group being experienced by some group members as being set up by the university rather than 'one of them' (although the researcher was, in fact, a student at the university). This perception may have acted against some of the empowering factors in mutual help groups.

The therapeutic factor that Yalom (1995) calls Universality, in which group members are helped by feeling that they are not alone with their problem certainly seemed to be present in both the content of the messages posted in the group and in the feedback from participants. Reflecting the findings of Lieberman and Russo's (2002) study, this was one of the most commonly cited positive factors by group members.

## Hypotheses

### 1) Differences in Outcome Between the Experimental Conditions

The first hypothesis that the study set out to test was that relative to students in the Information Only condition, those in the Support Group condition would have at post-test lower levels of psychological distress, higher levels of psychological well being, and a greater sense of being part of the university community.

This hypothesis was not supported. Students in both conditions had lower levels of psychological distress and higher levels of satisfaction by the end of the study. However, there was no evidence to suggest that membership of one or other of the study conditions affected the strength of this change. Neither were there significant changes in participants' sense of community with their university.

There could be several reasons for the lack of difference between outcomes in the experimental and control conditions. The first is that on-line mutual support does not provide psychological support for participants that is any greater then that provided by on-line advice pages on their own. Other reasons may be related to the design of the study and are discussed below under 'Methodological issues and limitations of the study.'

## 2) Differences in Outcome Related to Level of Support Group Use

The second hypothesis was that students in the Support Group condition who make greater use of the support group would receive greater benefit. This hypothesis was not confirmed. After initial scores had been taken into account, level of support group use was not found to be associated with levels of psychological distress, satisfaction with life or sense of community with their university. This was in contrast to other studies of on-line mutual support groups, which had found that greater use of the support group was associated with greater reported benefits (e.g. Dunham et al., 1998; Houston, Cooper, & Ford, 2002).

The reason for this lack of confirmation of the hypothesis may be that increased level of support group use is not associated with increased psychological support. Other reasons, as discussed below in the section on methodological issues and limitations of the study, may be associated with the study design, and in particular with the relatively few participants who had high levels of support group use.

## Subsidiary Research Question

*What Are the Students' Opinions of the Advice Pages and the Support Group?*

This question was addressed using both quantitative and qualitative approaches. The quantitative approaches suggested moderate levels of satisfaction with the advice pages. Lower levels of satisfaction with the site were associated with higher levels of general dissatisfaction, which may suggest that the questionnaire was picking up on a 'general dissatisfaction with life' factor rather than opinions of the site in particular. A more worrying interpretation would be that those who were less satisfied with their lives found the site less helpful. This interpretation could be seen to be supported by the finding that those who had a history of contact with mental health services were also less satisfied with the site. As the site is particularly aimed at these groups of students, this finding suggests that future research into on-line support for students might usefully investigate these issues.

Satisfaction with the support group was at a similar, moderate, level. However, those who had posted to the group had significantly higher levels of satisfaction than those who had only read messages ('lurkers'). As it is not possible to know the causal nature of this interaction it may be that only those who were already positively inclined towards the support group posted to the group, or it may suggest that those who made greater use of the group are more likely to find it useful, as is suggested by the study of Dunham et al. (1998). However, it should be borne in mind that the outcome measures in this study did not show a relationship between outcome and level of group use.

The qualitative data included both positive and negative comments about the site but gave an overall impression that many of those who replied to these questions had found the site helpful, some extremely so, saying that the site had made a difference to them and mentioning advice pages that they had found particularly useful. Several participants commented on how the website had helped them to get a perspective on their problems and others mentioned how helpful it had been to realise that they were not alone in having the problems that they did. The criticisms of the site tended to be that the information could be found in other places or was too basic, that the layout was boring or (from those in the Information Only condition) that the site did not contain interactive elements. Another criticism, from those in both experimental conditions, was that there was not enough involvement of mental health professionals, ie. some form of on-line contact whether in the support group or through email to individuals.

There were many positive comments from those in the mutual support group, particularly about being given a chance to air their problems and find out that they were not alone, although two group members said that they had found the group upsetting, one saying that they hadn't liked the reponses to their posting and the other saying that they found reading about people's problems upsetting.

# METHODOLOGICAL ISSUES AND LIMITATIONS OF THE STUDY

*Time-scale of Study*

One limitation of the design may have been that the study did not take place over a long enough time period to produce a size of effect that the outcome measures could detect. Winzelberg et al. (2000) had found a significant effect over an eight week period and Barrera et al. (2002) over a 12 week period, both similar in length to the 10 week duration of this study. However, both of these studies were of more structured support groups than that investigated in this study. It seems plausible that groups with less formal structure, such as that used in this study, may need an initial period in which to establish themselves, to develop their own structures and establish the roles taken by their various members. In support of this contention, Lieberman and Russo (2002) found that naturally occurring on-line groups, similarly to face-to-face groups, had a core group membership that communicated the culture of the group and provided leadership.

In their analysis of a naturally occurring group Salem and Bogat (2000) found that one of the themes of the postings was discussion of the roles of group members. Although the data in the current study were not specifically analysed for this theme, the content analysis suggested that there was little discussion of the group itself, and what there was, was mainly limited to expressions of appreciation of the group or to particular group members. This could suggest that a group structure and culture was in the very initial stages of being established. If these aspects of the group contribute to its hypothesised therapeutic effect, as is suggested by narrative approaches

(Rappaport, 1993) and by studies of face-to-face mutual help groups (Lieberman & Russo, 2002), then it could be that the group investigated in the current study was not yet functioning therapeutically at its highest level as it had not had time to establish its own structures or for roles or leadership to have been established amongst the group members.

*Numbers of Active Members Using the Mutual Support Group*

A second factor that may have affected the functioning of the mutual support group was the relatively low number of active members. Forty per cent of those in the Support Group condition visited the support group, of those who visited, two-thirds only read the messages and only a third (19 people) contributed to the board. Several of the contributors to the qualitative feedback about the group commented on how they would have liked more members and they hoped that the group would become more active as more people heard about it.

This pattern of participation, with a large proportion of the study participants using the group infrequently or not at all, was different from the participation patterns in the RCT's conducted by Chang et al. (2001) and by Winzelberg et al. (2000) in which much larger proportions of participants in the experimental conditions used the support group. However, the mutual support groups in both these studies differed in significant ways from naturally occurring groups. It may be that the patterns of support group use found in this study are closer to those found in naturally occurring groups. This is in accordance with the findings of Lieberman and Russo (2002), who

report high overall turnover rates for those who participate in the on-line mutual support group they studied, but with a core membership providing leadership and giving continuity through their communication of a group culture.

So, while possibly being more representative of naturally occurring mutual support groups the fact that a relatively small proportion of those randomised to the Support Group condition were active users of the support group may have limited the study's ability to detect differences in outcome.

*Outcome Measures*

A third factor could have been that inappropriate outcome measures were used. Humphreys and Rappaport (1994) stress the importance of using measures that will pick up changes that are perceived as important by group members, not just using measures designed for assessing clinical change in professional interventions. One of the measures used in the study the CORE, is designed for use within clinical practice, however the Satisfaction with Life Scale and the Sense of Community Index are both designed to assess non-clinical psychological factors, overall life satisfaction and sense of community inclusion, respectively. However, in defence of the measures used, the qualitative feedback and the quantitative assessments of satisfaction with the site did not produce results suggesting that participants' perceptions of the help provided by the mutual support group differed greatly from those being picked up by the outcome measures used. Also, the relatively high overall level of participants' scores on the CORE and the association between scores

on the Satisfaction with Life Scale and support group use suggest that these measures were picking up factors that were associated with looking for on-line psychological support and as such were appropriate to use in investigating outcome.

Another point, which may have affected the questionnaire data, is the method of its collection. All questionnaires were completed on-line. This was appropriate for the study but varies from the way that the questionnaires used for the reliability and normalisation data will have been collected. Although it has been shown that, in an undergraduate population, on-line completion of a brief questionnaire dealing with sensitive issues does not lead to significant variation from traditional pen and paper completion (Knapp & Kirk, 2003), it should be borne in mind that some unreliability with comparisons with the normative data may have been introduced by these varying methods of questionnaire completion.

It should also be noted that a relatively low proportion (47%) of participants completed the post-measures. Although analysis of the pre-measures did not suggest that those who completed the post-measures differed from those who did not, it may be that some biases were introduced at this stage.

## IMPLICATIONS FOR FURTHER RESEARCH

The present study is one of the first to use a randomised controlled design to look at outcome in an on-line mutual help group with characteristics very similar to those of naturally occurring mutual help groups. Although the fact that the group was part of

a study necessarily meant that there were differences from naturally occurring groups, particularly in the perception of power structures within the group (Humphreys & Noke, 1997), it managed to show that research into on-line mutual help can realistically be undertaken with a randomised controlled design and with groups with greater similarities to naturally occurring groups than previous randomised studies (Winzelberg et al., 2000; Barrera, et al., 2002; Chang et al., 2001).

A consideration of the limitations of the current study, above, suggests that while further research into outcome of on-line mutual help groups can be usefully conducted using random assignment and groups set up specifically for the study, particular attention needs to be paid to outcome measures used, time-scale of the study and participant numbers.

Group members may have quite different reasons for joining, and expectations of, an on-line mutual help group, particularly if the group is aimed at a wide population such as students, rather than a group more specifically defined by a target problem. Outcome may be easier to investigate if individual specific measures are included. These might tap into the individual's goals in joining the group by using a measure such as Goal Attainment Scaling (Mintz & Kiesler, 1982) or, possibly more usefully, track the target complaints (Battle et al., 1966) that brought the individual to the group. The present study successfully used both a clinical measure (the CORE) and a more general measure of psychological distress (the Satisfaction with Life Scale).

However, the measure used to investigate group members' sense of being part of a community (the Sense of Community Index) did not seem to tap into factors associated with mutual support group use. Rather than using a measure of sense of community, future studies might find it useful to include some evaluation of level of social support, as previous studies have found that on-line mutual support group use was associated with increases in perceived social support (Barrera et al., 2002). The present study also usefully combined quantitative and some basic qualitative assessment of participants' experiences. Future studies might seek to increase the depth of the qualitative analysis to investigate in greater detail the group members' experiences of participating in the on-line mutual support group.

The time-scale over which this study took place was similar to that of previous randomised studies of on-line mutual help. However, as discussed above, in attempting to produce a group nearer in character to naturally occurring groups, the present study provided less group structure than previous studies. It seems likely that adopting this strategy means that more time is needed for the group to develop its own structures and leadership roles and therefore it is possible that its therapeutic efficacy is limited, or of a different nature, during this formative period. There is good reason for future studies to adopt a similar 'hands off' approach but any studies doing so might benefit from allowing a longer time-scale than the present study. Future studies might also benefit from investigating ways that some initial structure and leadership could be provided in a way that mimics that of naturally occurring groups. For example, the researchers might co-operate in setting up a group with

potential group members such as those already involved in face-to-face mutual help in the area being investigated. Obviously these sorts of tactics could introduce biases into a randomised trial and the costs and benefits of such approaches would have to be carefully considered.

An additional factor for future researchers to consider is the question of participant numbers. There is evidence that naturally occurring on-line mutual help groups have a high turnover of members outside the core membership (Lieberman & Russo, 2002) and in any case participation in any mutual help is generally subject to self-selection procedures (Humphreys & Rappaport, 1994). Future studies adopting a non-structured approach to setting up an on-line mutual help group should ensure that their participant base is large enough to allow a wide range of participation strategies for those with access to the group, while providing enough interaction to make the group active and viable. Exactly what the proportions of non-users, lurkers, and active members are likely to be is difficult to estimate at the present stage of research in the field, and is also likely to vary with the concerns of the groups being researched. The present study found proportions of approximately 4:2:1 (non-user: lurker: user), future studies may therefore wish to base sample size estimates on similar proportions.

# IMPLICATIONS FOR THE THERAPEUTIC USE OF ON-LINE MUTUAL HELP GROUPS

The results of the study suggest that some students experiencing high levels of psychological distress are likely to make use of on-line psychological advice and of on-line mutual support. They also suggest that that a sub-section of these, especially those who have higher levels of dissatisfaction with their lives or who have had mental health problems in the past will be particularly receptive to the use of a mutual support group.

While the study did not find better outcomes for those who had access to the mutual support group compared to those who did not, the fact that those with greater levels of dissatisfaction or who have had mental health problems in the past made greater use of the on-line support group may suggest that they perceive some benefit from the group which was not picked up by the outcome measures used in this study.

There was also support for the presence of several factors thought to be therapeutic. These included, universality, self-disclosure, emotional and informational aspects of social support, and the use of experiential knowledge. These support the possibility of the on-line mutual support group being psychologically helpful to its members despite the lack of significant change on the outcome measures used in this study.

The on-line support offered by both the advice pages and the mutual support group clearly did not and was not intended to provide an alternative to individual contact

with a mental health professional, and this fact was mentioned by several of the comments in the feedback about the site. However, the feedback also suggested that some students using the website found both the advice pages and the support group very useful, particularly in making them feel that they were not alone with their problems. The website was also available at times that traditional support services are not, and over half of the use of the support group took place outside of working hours. It was also notable that many of those who used the support group took advantage of the unique facility available in on-line an group to 'lurk', that is to observe the interactions of the group but not to take part themselves. However, it should be noted that 'lurkers' had lower levels of satisfaction with the group than those who posted messages.

Considerations of the possible limitations of the study, above, and particularly comparisons of the outcome findings with other studies of more structured on-line mutual help groups (Winzelberg et al., 2000; Barrera et al., 2002) suggest the importance of careful consideration of how on-line mutual help groups might be incorporated with professional mental health care. Although further research is needed, it seems likely that if relatively unstructured on-line mutual help groups are initiated by professionals, for example by the provision of the discussion boards and by inviting people to participate, then time will need to be allowed for the development of roles and structure within the groups before they may become optimally effective in helping their members. It may be that a more effective strategy would be co-operation with already established on-line groups, though, of

course, this is not an option if there are none already existing. If this is the case it may be useful to think carefully about providing some elements of group structure, at least in the initial stages of the group. However, little is known about how this may interfere with the development of the on-line mutual support group and professional involvement has been found to affect both the behaviour and the perception of group members (Toro et al., 1988).

In addition to needing more time to develop, less structured groups may require a greater potential participant base to provide enough active members in the group. In the present study around 40% of those with access to the group used it, but only a third of these became active members. This pattern of participation seems to be characteristic of less structured (Dunham et al., 1998) and naturally occurring groups (Lieberman & Russo, 2002). The size of the potential participant base is therefore an important consideration for those thinking of setting up an on-line mutual help group.

To summarise the clinically relevant aspects, the study suggests that a sub-section of students with levels of psychological distress higher than the general student population will use both on-line psychological advice and on-line mutual support. Although the study did not show that the provision of an on-line mutual support group was more beneficial than the provision of on-line advice pages on their own, the group was used more by those with higher levels of life dissatisfaction and individual members reported the group helpful. Evidence was also found for the presence of group factors thought to work therapeutically.

The study suggests that if professional mental health care workers are considering on-line mutual support groups as adjuncts to mental health care programmes then they should think carefully about co-operating with already operating groups, or, if these are not available they should consider what appropriate levels of structure for the group may be bearing in mind the number of potential participants and the time-scale available for the group to establish itself.

## SUMMARY

There is a growing interest in the involvement of service user groups in the mental health care system, in both the planning and implementation of services (Department of Health, 1999). As an adjunct to traditional services, mutual support groups potentially offer a way of providing psychological help and support of a type that cannot realistically be supplied by professional services, both because of resource implications and because of the unique nature of the support that can be provided by peers (Marshall, 2003).

The birth of the internet has lead to new types of health care provision, so called 'telehealth' applications (Jerome et al., 2000). It has also led to the rapid growth of a new form of mutual support, on-line groups for those with psychological problems. If on-line mutual support groups are able to provide effective psychological help, they have the potential to be a highly valuable mental health resource (Houston et al., 2002). However, there is currently relatively little research into the functioning of

these groups and even less into their effectiveness at providing psychological help. Research into the process of on-line groups has, to date, suggested that some of the factors that are thought to be therapeutic in face-to-face groups are also present in on-line mutual support groups (e.g. Lieberman & Russo, 2002). A small number of randomised controlled trials have been conducted into the effectiveness of on-line mutual support. Although these have shown generally promising results, the groups studied have differed in significant ways from naturally occurring on-line groups.

Through a randomised controlled trial of an on-line mutual support group that more closely resembled naturally occurring groups than previous trials, this study was designed to add to the expanding body of literature dealing with process and outcome of mutual support groups for people with mental health problems. It also aimed to investigate the take up and use of on-line psychological support by university students, a population with higher than general population levels of psychological distress.

The study found that at least a sub-section of students with relatively high levels of psychological distress were receptive to, and made use of, on-line psychological advice and support. Evidence was found for the presence of helping processes that have been hypothesised as therapeutic in other research into group process: universality, self-disclosure, the use of experiential knowledge, and both informational and emotional aspects of social support. There were particularly high levels of self-disclosure and of emotional and informational support. It was also

notable that students with higher levels of psychological distress made greater use of the mutual support group. The major issues that students addressed using the advice pages and mutual support group were worries related to their studies, interpersonal problems and issues relating to depression and sadness. Overall, students were moderately satisfied with the sites, with many saying that they found them personally helpful.

No differences in outcome were found between the two experimental conditions, those with access only to on-line advice pages and those with access to both advice pages and the on-line mutual support group. This may have been due to the ineffectiveness of on-line mutual support in producing psychological change. However, the design of the study may also have limited its ability to detect changes. The design of the study was informed by previous research, but this was the first known study to use a randomised controlled design to investigate a group that was similar in structure to naturally occurring groups. Future studies of this type should carefully consider the time-scale of the study in order to allow the development of a group structure, and also the size of the overall participant base in order to allow for participant self-selection amongst those in the mutual support group condition. Researchers should also consider co-operation with already existing groups (particularly those who currently only exist in more traditional forms) in the setting up of on-line mutual help groups. These factors should also be considered by those who are thinking of using on-line mutual support as part of a clinical intervention.

This new and rapidly expanding area of electronic communication offers great potential for new forms of psychological helping, with the possibility of reaching people who find it difficult to access more traditional forms of help and also to act as an adjunct to traditional services. This study's findings that those with higher levels of psychological distress used the mutual support group more, the positive tone of much of the qualitative feedback, and the presence of therapeutic factors in the group process suggest that further research is warranted.

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# APPENDICES

**APPENDIX 1**

**LETTER OF APPROVAL FROM ETHICS COMMITTEE**

# University College London Hospitals **NHS**

NHS Trust

## The Joint UCL/UCLH Committees on the Ethics of Human Research

Committee Alpha Chairman:
Professor André McLean

Please address all correspondence to:
Marieta Odendaal
Research & Development Directorate
UCLH NHS Trust
1st floor, Vezey Strong Wing
112 Hampstead Road, LONDON NW1 2LT
Tel. 020 7380 9579   Fax 020 7380 9937
e-mail: iwona.nowicka@uclh.org

28 June 2002

Our ref: 02Alpha026

Dr Chris Barker
Senior Lecturer
Sub-Department of Clinical Health Psychology
UCL
Gower Street

Dear Dr Barker

**Study No:**   02/0117 *(Please quote in any correspondence)*
**Title:**   **The process and outcome of an online mutual support group for UCL students**

Thank you very much for your letter addressing the points raised by the ethics committee.   There are no further objections on ethical grounds for this study to go ahead.

Please note that it is important that you notify the Committee of any adverse events or changes (name of investigator etc) relating to this project.   You should also notify the Committee on completion of the project, or indeed if the project is abandoned.   **Please remember to quote the above number in any correspondence.**

Yours sincerely

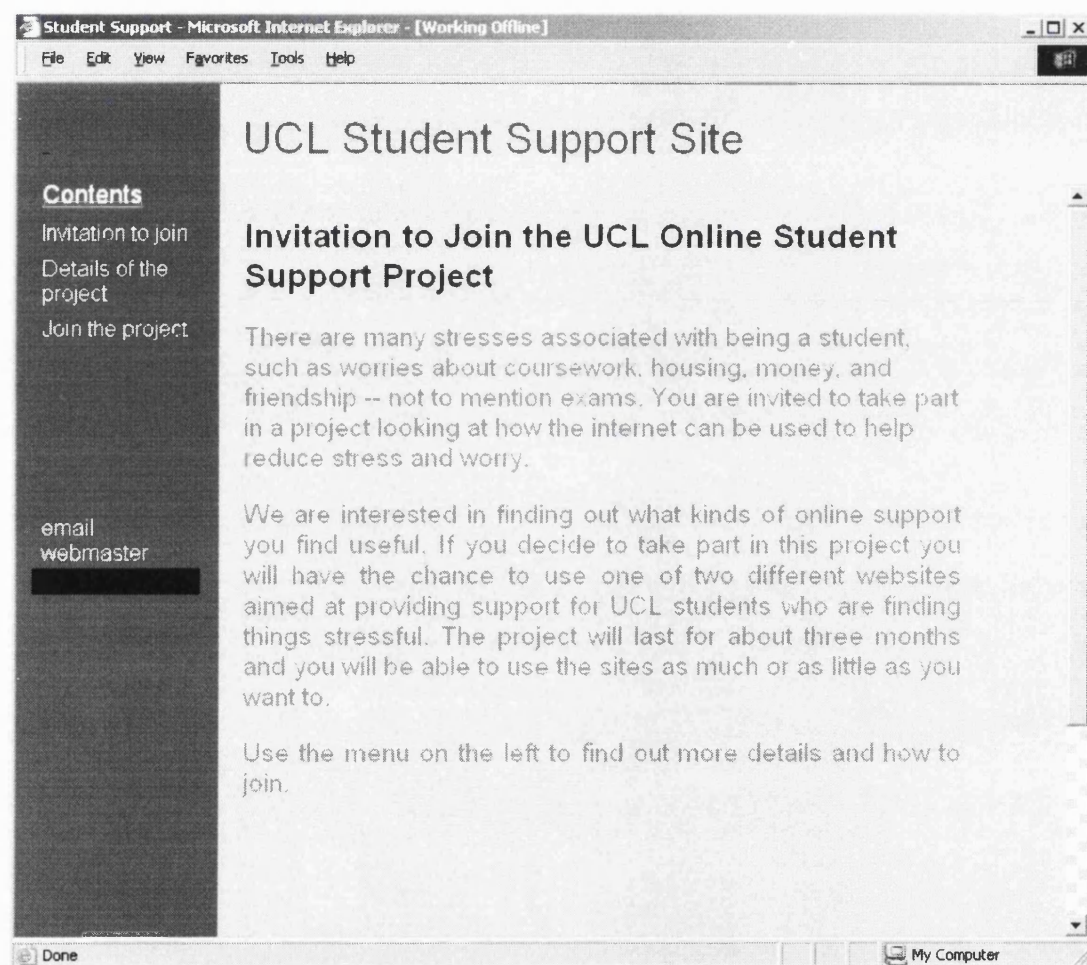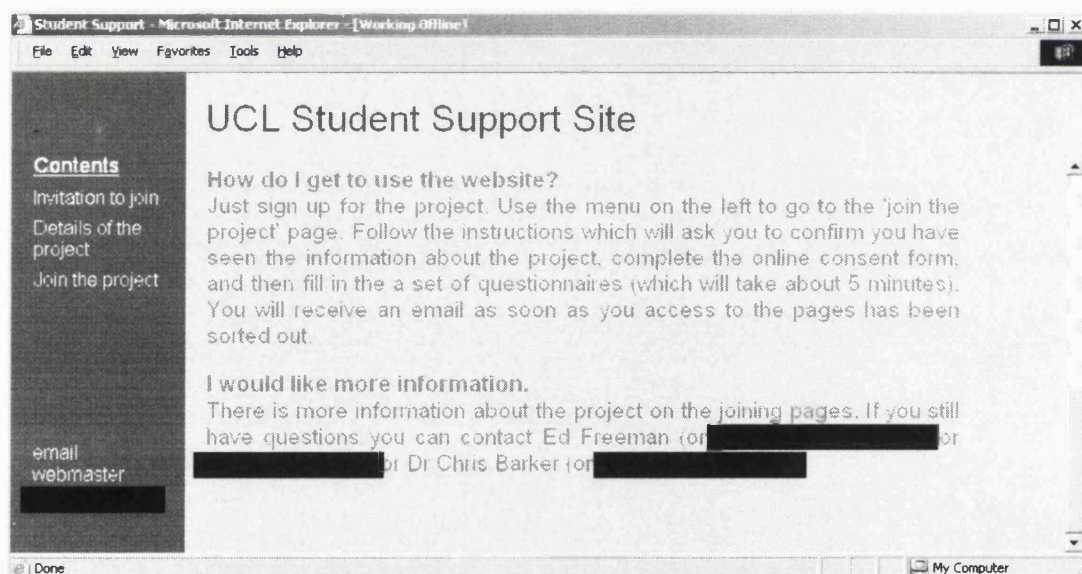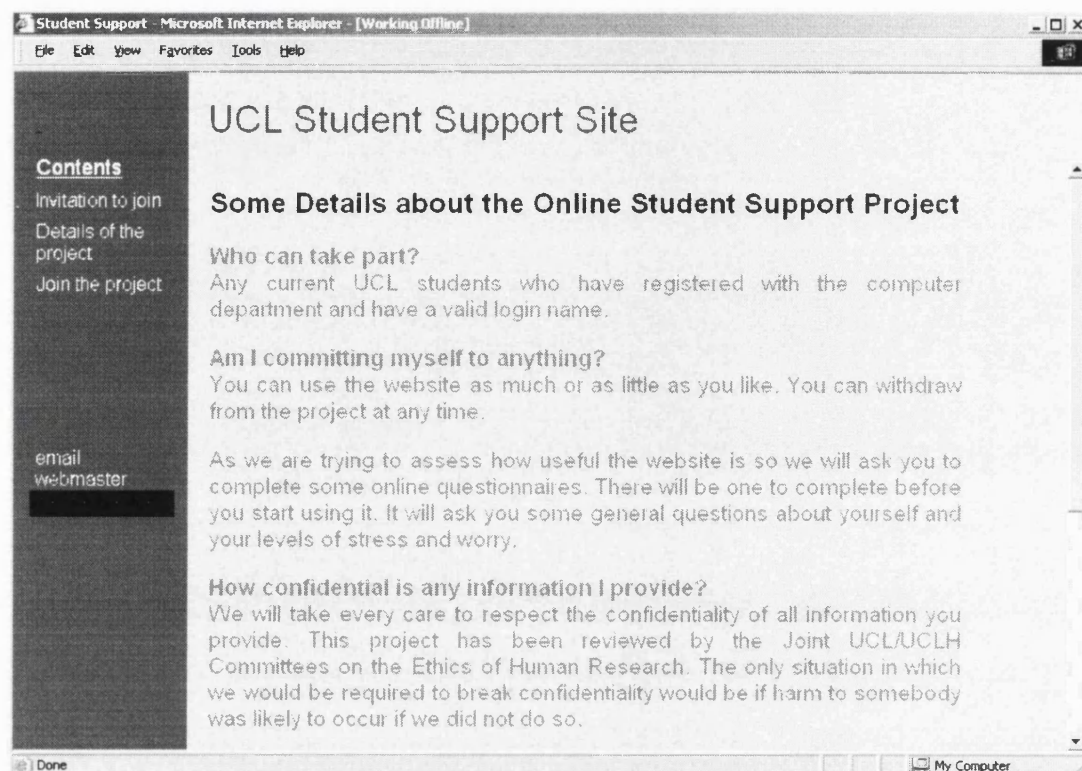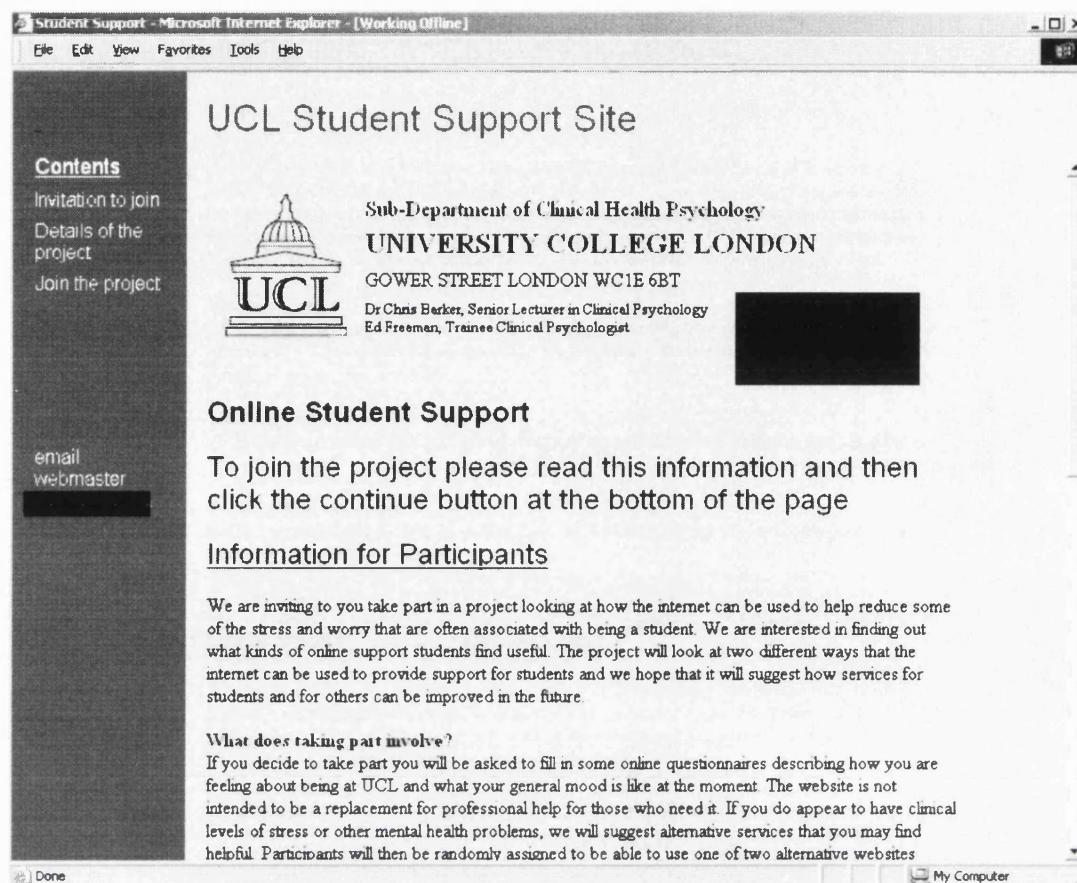**Professor André McLean, BM BCh PhD FRC Path**
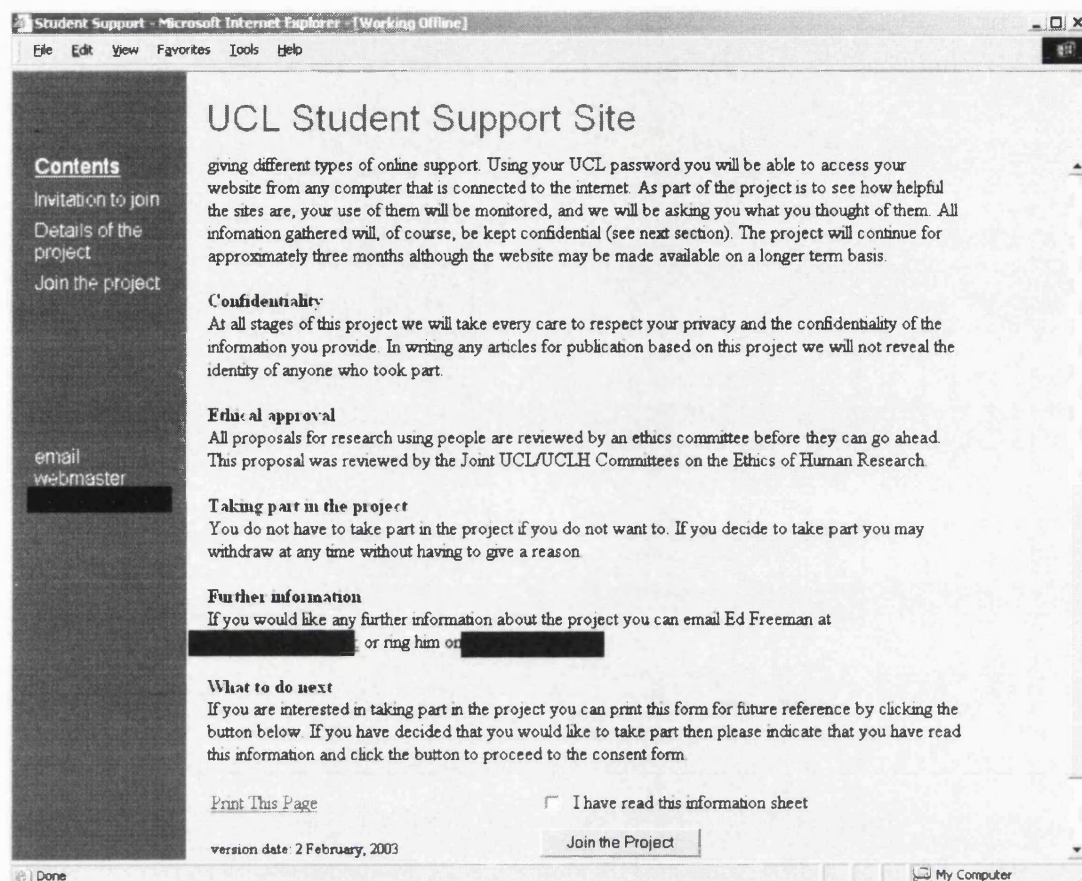**Chairman**

## APPENDIX 2

## PARTICIPANT INFORMATION FORMS

These forms were viewed and completed on the internet. They are presented as closely as possible to the manner in which participants would have seen them and are therefore reproduced as a screen shots of the web pages.

---

**Student Support - Microsoft Internet Explorer - [Working Offline]**

File   Edit   View   Favorites   Tools   Help

## UCL Student Support Site

**Contents**

Invitation to join

Details of the project

Join the project

email webmaster

### Some Details about the Online Student Support Project

Who can take part?
Any current UCL students who have registered with the computer department and have a valid login name.

Am I committing myself to anything?
You can use the website as much or as little as you like. You can withdraw from the project at any time.

As we are trying to assess how useful the website is so we will ask you to complete some online questionnaires. There will be one to complete before you start using it. It will ask you some general questions about yourself and your levels of stress and worry.

How confidential is any information I provide?
We will take every care to respect the confidentiality of all information you provide. This project has been reviewed by the Joint UCL/UCLH Committees on the Ethics of Human Research. The only situation in which we would be required to break confidentiality would be if harm to somebody was likely to occur if we did not do so.

Done                                                                    My Computer

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**Student Support - Microsoft Internet Explorer - [Working Offline]**

File   Edit   View   Favorites   Tools   Help

## UCL Student Support Site

**Contents**

Invitation to join

Details of the project

Join the project

email webmaster

How do I get to use the website?
Just sign up for the project. Use the menu on the left to go to the 'join the project' page. Follow the instructions which will ask you to confirm you have seen the information about the project, complete the online consent form, and then fill in the a set of questionnaires (which will take about 5 minutes). You will receive an email as soon as you access to the pages has been sorted out.

I would like more information.
There is more information about the project on the joining pages. If you still have questions you can contact Ed Freeman (or                    or                    Dr Chris Barker (or

Done                                                                    My Computer

# UCL Student Support Site

Sub-Department of Clinical Health Psychology
**UNIVERSITY COLLEGE LONDON**
GOWER STREET LONDON WC1E 6BT
Dr Chris Barker, Senior Lecturer in Clinical Psychology
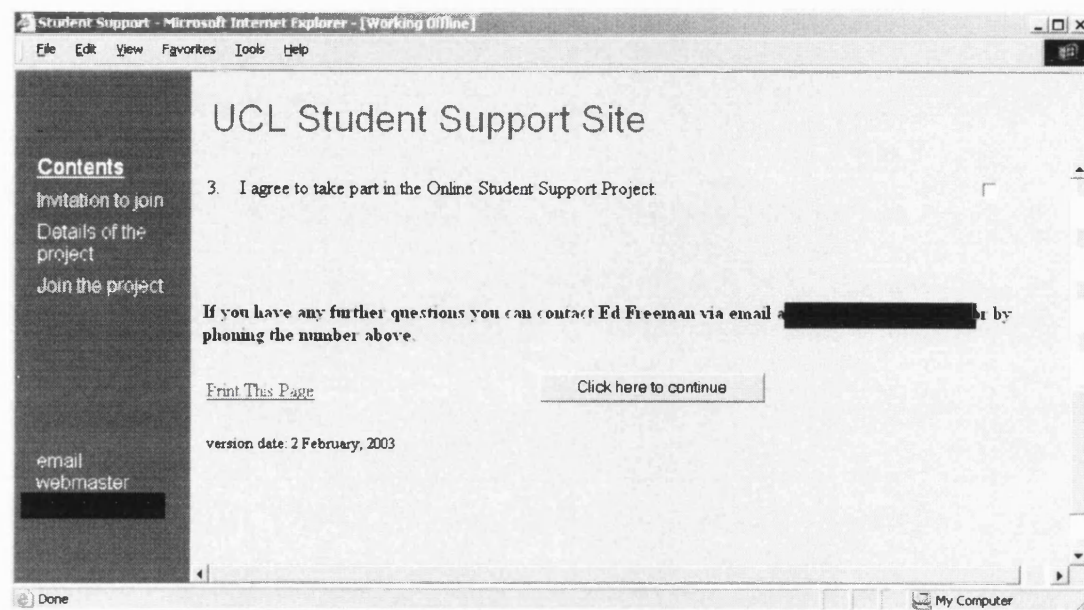Ed Freeman, Trainee Clinical Psychologist

## Online Student Support

## To join the project please read this information and then click the continue button at the bottom of the page

### Information for Participants

We are inviting to you take part in a project looking at how the internet can be used to help reduce some of the stress and worry that are often associated with being a student. We are interested in finding out what kinds of online support students find useful. The project will look at two different ways that the internet can be used to provide support for students and we hope that it will suggest how services for students and for others can be improved in the future.

### What does taking part involve?

If you decide to take part you will be asked to fill in some online questionnaires describing how you are feeling about being at UCL and what your general mood is like at the moment. The website is not intended to be a replacement for professional help for those who need it. If you do appear to have clinical levels of stress or other mental health problems, we will suggest alternative services that you may find helpful. Participants will then be randomly assigned to be able to use one of two alternative websites

Done                                                              My Computer

# UCL Student Support Site

**Contents**

Invitation to join

Details of the project

Join the project

email
webmaster

giving different types of online support. Using your UCL password you will be able to access your website from any computer that is connected to the internet. As part of the project is to see how helpful the sites are, your use of them will be monitored, and we will be asking you what you thought of them. All information gathered will, of course, be kept confidential (see next section). The project will continue for approximately three months although the website may be made available on a longer term basis.

**Confidentiality**
At all stages of this project we will take every care to respect your privacy and the confidentiality of the information you provide. In writing any articles for publication based on this project we will not reveal the identity of anyone who took part.

**Ethical approval**
All proposals for research using people are reviewed by an ethics committee before they can go ahead. This proposal was reviewed by the Joint UCL/UCLH Committees on the Ethics of Human Research.

**Taking part in the project**
You do not have to take part in the project if you do not want to. If you decide to take part you may withdraw at any time without having to give a reason.

**Further information**
If you would like any further information about the project you can email Ed Freeman at ████████████████ or ring him on ████████████

**What to do next**
If you are interested in taking part in the project you can print this form for future reference by clicking the button below. If you have decided that you would like to take part then please indicate that you have read this information and click the button to proceed to the consent form.

Print This Page                              ☐   I have read this information sheet

version date: 2 February, 2003                    Join the Project

# APPENDIX 3

# PARTICIPANT CONSENT FORMS

This form was viewed and completed on the internet. It is presented as closely as possible to the manner in which participants would have seen it and is therefore reproduced as a screen shot of the web page.

.

UCL Student Support Site

3. I agree to take part in the Online Student Support Project.

If you have any further questions you can contact **Ed Freeman** via email at ■ or by phoning the number above.

Print This Page          Click here to continue

version date: 2 February, 2003

## APPENDIX 4

## DEMOGRAPHIC QUESTIONNAIRE

This questionnaire was viewed and completed on the internet. It is presented as closely as possible to the manner in which participants would have seen them and is therefore reproduced as a screen shot of the web page.

# APPENDIX 5

# SENSE OF COMMUNITY INDEX (SCI)

This questionnaire was viewed and completed on the internet. It is presented as closely as possible to the manner in which participants would have seen them and is therefore reproduced as a screen shot of the web page.

# APPENDIX 6

# CLINICAL OUTCOMES IN ROUTINE EVALUATION (CORE)

This questionnaire was viewed and completed on the internet. It is presented as closely as possible to the manner in which participants would have seen them and is therefore reproduced as screen shots of the web page.

| | | |
|---|---|---|
| **Questionnaire - Microsoft Internet Explorer - [Working Offline]** | | _ □ × |
| File Edit View Favorites Tools Help | | |

Instructions for the next set of questions:
There are 34 questions below about how you have been OVER THE LAST WEEK. Please read each statement and think how often you felt that way over the last week. Then use the pull down menus to indicate which is closest to this.

| | | |
|---|---|---|
| 1 | I have felt terribly alone and isolated | ▼ |
| 2 | I have felt tense, anxious or nervous | ▼ |
| 3 | I have felt I have someone to turn to for support when needed | ▼ |
| 4 | I have felt O.K. about myself | ▼ |
| 5 | I have felt totally lacking in energy and enthusiasm | ▼ |
| 6 | I have been physically violent to others | ▼ |
| 7 | I have felt able to cope when things go wrong | ▼ |
| 8 | I have been troubled by aches, pains or other physical problems | ▼ |
| 9 | I have thought of hurting myself | ▼ |
| 10 | Talking to people has felt too much for me | ▼ |
| 11 | Tension and anxiety have prevented me doing important things | ▼ |
| 12 | I have been happy with the things I have done | ▼ |
| 13 | I have been disturbed by unwanted thoughts and feelings | ▼ |

My Computer

Questionnaire – Microsoft Internet Explorer - [Working Offline]

File  Edit  View  Favorites  Tools  Help

| 14 | I have felt like crying | [          ▼] |
| 15 | I have felt panic or terror | [          ▼] |
| 16 | I made plans to end my life | [          ▼] |
| 17 | I have felt overwhelmed by my problems | [          ▼] |
| 18 | I have difficulty getting to sleep or staying asleep | [          ▼] |
| 19 | I have felt warmth and affection for someone | [          ▼] |
| 20 | My problems have been impossible to put to one side | [          ▼] |
| 21 | I have been able to do most things I needed to | [          ▼] |
| 22 | I have threatened or intimidated another person | [          ▼] |
| 23 | I have felt despairing or hopeless | [          ▼] |
| 24 | I have thought it would be better if I were dead | [          ▼] |
| 25 | I have felt criticised by other people | [          ▼] |
| 26 | I have thought I have no friends | [          ▼] |
| 27 | I have felt unhappy | [          ▼] |
| 28 | Unwanted images or memories have been distressing me | [          ▼] |
| 29 | I have been irritable when with other people | [          ▼] |

My Computer

Questionnaire – Microsoft Internet Explorer - [Working Offline]

File  Edit  View  Favorites  Tools  Help

| 30 | I have thought I am to blame for my problems and difficulties | [          ▼] |
| 31 | I have felt optimistic about my future | [          ▼] |
| 32 | I have achieved the things I wanted to | [          ▼] |
| 33 | I have felt humiliated or shamed by other people | [          ▼] |
| 34 | I have hurt myself physically or taken dangerous risks with my health | [          ▼] |

My Computer

## APPENDIX 7

## SATISFACTION WITH LIFE SCALE (SWLS)

This questionnaire was viewed and completed on the internet. It is presented as closely as possible to the manner in which participants would have seen them and is therefore reproduced as a screen shot of the web page.

## APPENDIX 8

## CLIENT SATISFACTION QUESTIONNAIRE (CSQ)

This questionnaire was viewed and completed on the internet. It is presented as closely as possible to the manner in which participants would have seen them and is therefore reproduced as screen shots of the web page.

Questionnaire - Microsoft Internet Explorer - [Working Offline]

File   Edit   View   Favorites   Tools   Help

What didn't you like about the website?

Do you have any suggestions for improvements in the future?

Done                                                    My Computer

# APPENDIX 9

## ON-LINE SUPPORT GROUP QUESTIONNAIRE

This questionnaire was viewed and completed on the internet. It is presented as closely as possible to the manner in which participants would have seen them and is therefore reproduced as screen shots of the web page.



Questionnaire - Microsoft Internet Explorer - [Working Offline]

File   Edit   View   Favorites   Tools   Help

Instructions for the next set of questions:
We are interested in your experience of the online support group. Check the circle that corresponds most closely with how much you agree with each statement. Please do not skip any items. If you change your mind you can click in another circle. If you have any other comments you would like to make you can write them in the box below.

| | | Not at all | | | | | | Very much |
|---|---|---|---|---|---|---|---|---|
| 1 | I felt supported by other members of the group | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 2 | I felt listened to by other members of the group | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 3 | Things discussed by other group members were relevant to me | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 4 | Other people addressed the issues I raised | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 5 | I felt comfortable raising issues in the group | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 6 | I felt a connection to other members of the group | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 7 | I felt satisfied with being part of the group | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| 8 | I prefered being anonymous to having my real name | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Please tell us what you thought about the support group, both good and bad. We would be especially interested in any suggestions you might have as to how it might be improved.

Done                                                          My Computer

Questionnaire - Microsoft Internet Explorer - [Working Offline]

File   Edit   View   Favorites   Tools   Help

Thank you very much for taking the time to complete the questionnaire. Now please press the submit button to send the information. You will be entered for the raffle and have the chance to win £25

Submit

(You will be asked to confirm your user name and password when you press submit)

version date: 12 May, 2003

Done                                                                        My Computer

# APPENDIX 10

# RECRUITMENT EMAIL

Sent to: All undergraduates and postgraduates
Title: Stressed out or feeling low?

Message:

Stressed out, feeling low, or work getting you down?

Try out a new website, specially designed for ███ students to help cope with some of the difficulties that are often a part of student life.

The site has just recently been launched and we are looking for ███ students to test out how useful it is in reducing stress levels

Check it out at http███████████████ If you decide to try it you'll be asked to fill in a questionnaire and then will get access to the website.

You can email me at ██████████████ if you have any questions or comments.


Ed Freeman, Post-graduate Trainee Clinical Psychologist
Supervised by Dr Chris Barker

Sub-Dept of Clinical Health Psychology

# APPENDIX 11

# EXAMPLE OF AN EMAIL SENT TO A STUDENT SCORING HIGHLY

# ON THE CORE QUESTIONNAIRE

Title: Feedback from student support project
Message:

Thanks for joining the ██████ student support project. As you probably remember, in order to join the project you filled in some questionnaires about how you have been feeling recently.

As part of our ethical requirements for the project, it is our duty to contact people whose questionnaire scores indicate that they may be experiencing somewhat higher levels of distress. Your replies to some of the questions suggested that you might find it helpful to seek additional support.

You may find it useful to speak to your UCL personal or academic tutor. Otherwise the ██████ Student Counselling Service specialises in providing confidential help for ██████ students. The Dean of Students is also available for help (you can make an appointment by phoning ████████████ in working hours). Other possibilities are listed on the "sources of support" link on the site itself.

If you would like to talk over why you have been sent this email or have any other questions about it, you are welcome to contact me, Ed Freeman by emailing me on ████████████████. You can also contact either of my supervisors for this project: Dr Chris Barker ████████████████ or Dr Nancy Pistrang ████████████████ who are both clinical psychologists; they are also both available by phone on ████████ during working hours.

We hope that the support project will prove useful to you and we welcome any feedback on your experience of using it.

With best wishes

Ed Freeman

Post-graduate trainee clinical psychologist
Webmaster - Student Support Project

**APPENDIX 12**

**EXAMPLE OF AN EMAIL SENT BY THE RESEARCHER TO SOMEONE ASKING FOR FEEDBACK ABOUT THEIR HIGH CORE SCORE**

(Edited to maintain anonymity)

The email included the following:

It sounds like you have been having an extremely stressful and worrying time over the last few months and probably longer..... The questionnaire answers really echoed what you have said in the email. That you have a lot of problems at the moment that are hard to put to one side and which are probably affecting how you feel in most areas of your life. The answers you gave also suggest that you may feel a lack of support at the moment, not only from UCL staff, as you say in your email, but in general...... Obviously I only know about the answers that you gave to the questionnaire and what you have said in your email but it sounds like you are going through a pretty difficult time at the moment and it might be helpful to look for a little extra support from somebody, like a counsellor, who is outside your circle of friends and colleagues and who you know you can talk to without there being any negative repercussions.

# APPENDIX 13

## SOME SAMPLE WEB PAGES FROM THE SITES

## Home Page

## An Advice Page



UCL Student Support—Microsoft Internet Explorer — [Working Offline]

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### UCL Student Support Site

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## Depression

### Am I depressed - or is it something else?

Our mood naturally varies with time and from day to day and everyone gets
down at times. We may say that we are "down", "fed up", or "feeling blue",
or put it down to "feeling under the weather"; we may get disheartened
about something that happens or doesn't go the way we would have liked.
Although people often say "I'm depressed" to mean these things, this
would not be called clinicaldepression and is simply part of the normal ups
and downs of life. Some people naturally experience frequent mood
changes, while others have a relatively stable equilibrium.

Similarly, if we suffer a major loss, we readily understand that it is normal to
grieve. Although some of the emotions we feel when we are bereaved
appear similar to depression, grieving is a natural and ultimately healing
process. Sometimes, though, past losses which were not fully mourned at
the time may appear as depression much later.

So, what is depression?

Done                                                      My Computer

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## So, what is depression?

Put simply, the distinction between feeling "down" and being depressed is one of both degree and duration. Depression certainly includes a persistent low mood and loss of interest or pleasure in life - it also commonly involves:

- a change in eating, weight and/or sleep patterns
- lowered energy levels and a reduced level of physical activity
- difficulty with concentration
- feelings of worthlessness
- loss of interest, enthusiasm and enjoyment
- feeling irritable and short-tempered, or tearful
- being unable to continue as usual with work and interests, maybe because of feeling listless, they "cannot be bothered" or things feel pointless
- sometimes people feel that it just not worth going on, or think about suicide.

Please note that we may feel *some* of the above for reasons other than depression, or even several together for a *brief while*, without this being of major concern. Someone who is depressed will experience a number of

# Discussion Board

(Edited to maintain anonymity)

Discussion Boards, Univerity College London - Microsoft Internet Explorer

File   Edit   View   Favorites   Tools   Help

Re: heartbroken... [Edit]
    Re: heartbroken... [Edit]
        Re: heartbroken... [Edit]
            Re: heartbroken... [Edit]

    Re: heartbroken... [Edit]

- Revision nightmare [Edit]   [Expand whole thread]
    Re: Revision nightmare ( [Edit]

- Worrying about the wrong things [Edit]   [Expand whole thread]
    Re: Worrying about the wrong things [Edit]
    Re: Worrying about the wrong things [Edit]
    Re: Worrying about the wrong things [Edit]

- work loss [Expand whole thread]
    Re: work loss [Edit]
        Re: work loss [Edit]

- looking for a reason to care [Edit]   [Expand whole thread]
    Re: looking for a reason to care [Edit]
        Re: looking for a reason to care [Edit]
            Re: looking for a reason to care [Edit]
                Re: looking for a reason to care [Edit]
                Re: looking for a reason to care [Edit]

    Re: looking for a reason to care [Edit]
        Re: looking for a reason to care [Edit]
            Re: looking for a reason to care [Edit]
            Re: looking for a reason to care [Edit]

Internet