Social Isolation

Strategies for Connecting and Engaging Older People

Introduction

The Cornell Institute for Translational Research on Aging (CITRA) sponsors a program of research reviews on issues of importance to the practice and service community in New York City. The following research review focuses on scientifically tested strategies for reducing social isolation among older adults. A long research tradition in the field of gerontology has related *social integration* - participation in multiple life roles and activities and access to social support in times of need - to good health and well-being among older people. Conversely, *social isolation*, or the lack of access to social support and the lack of meaningful social relationships, roles, and activities, is related to poor health and lower well-being.

Interest in social integration and social isolation dates to the founding of gerontology as a scientific field in the 1960s, and there exists a vast knowledge-base that suggests a variety of ways in which social isolation can be prevented. Yet there have been a relatively small number of scientifically valid studies -- in particular, those using randomized controlled trials (RCT) -- that demonstrate the effectiveness of interventions designed to decrease social isolation among older people. Randomized controlled studies are the scientific "gold standard." Such studies involve randomly assigning participants to either a program designed to overcome or mitigate social isolation (the "intervention") or to a comparison group of similar others that does not receive the program or intervention (the "control" group). Outcomes for the intervention group are compared to outcomes for the control group to determine whether any change in health or behavior occurred in the intervention group.

After presenting a brief overview of the ways researchers have defined social isolation and of the benefits of social integration, this paper summarizes the findings from fifteen randomized controlled intervention studies, paying attention to the interventions that failed as well as to those that succeeded. Our search found a total of fifteen randomized controlled studies of social isolation or loneliness among older adults, however, two were eliminated because they merely extended previously reported studies without providing additional information relevant to our purposes. This review is a synthesis and extension of several published reviews of interventions designed to reduce social isolation and increase social integration among the elderly [1-5]. Our goals in providing this review are 1) to provide practitioners with a summary of what the most rigorous scientific studies suggest are the best ways to intervene to support isolated older adults, and 2) to provide a springboard for discussions with practitioners about the direction of future research and how to make research findings increasingly relevant to practice.

What is Social Isolation?

Researchers define social isolation both *objectively*, or in ways that can be determined by onlookers, such as living alone or lacking social contacts, and *subjectively*, in ways that only the older adult can report from his or her internal experience such as feeling lonely or isolated [2, 6, 7]. Objectively, social isolation is the lack of contact and interaction with other people [8, 9]. Subjectively, it is the feeling of loneliness or lack of companionship or close and genuine communication with others [8, 9]. Loneliness is the perception of being alone and can be experienced even when one is in contact with others.

Although older persons can live alone without being socially isolated or feeling lonely, living alone is a leading indicator of the potential for social isolation. Seniors are the age group

most likely to live alone in the United States [10]. Twenty-eight percent of Americans over the age of 65 live alone. Of that group, 40% are women and 12% are men. Older people in New York City (32%) are more likely to live alone than their counterparts in other parts of the country (28%) [11].

Causes of Social Isolation in Old Age

There are a number of potential causes of social isolation, the most important of which include role loss, living alone, widowhood, health problems, poverty, and the aging Baby Boom.

- *Role loss*. The loss of intimate relationships with spouse and friends, and the loss of key social roles such as employment are almost inevitable as people age. Replacement of these relationships and roles with new and meaningful activities is often difficult for older people, thus these losses often result in social isolation [12-16]. Role and relationship losses plus the increased risk of declining health and chronic disease converge with a number of other factors, substantially increasing the risk of social isolation as people age [17, 18].
- *Living alone*. One of the most notable factors contributing to the likelihood of social isolation among older adults is that, over time, both men and women have become less likely to live with relatives other than a spouse [19]. This trend has been characterized as a major demographic shift in the 20th century. In the New York City context, it is worth noting that approximately 32 % of older adults live alone. Approximately one-third of white older persons live alone compared to approximately 20 percent of black older persons in the US, a difference which may be explained in part by differences in

extended family networks [20, 21]. However, differences in socio-economic status may offset negative effects for white older adults.

- *Widowhood*. Because women live longer than men, usually marry men older than themselves, and are less likely to remarry after divorce or widowhood, they (40%) are much more likely than men (12%) to live alone [10]. Half of women over age 65 are widowed and the number increases to 81% for women over age 85 [22] [23]. While women are more likely to live alone in the later years, they do tend to maintain larger social networks than older men who live alone. Men tend to rely primarily on their spouse for social support as they age and often fail to rebuild networks after losing a spouse. Hence, older women are more likely to live alone than men, but less likely to live an isolated lifestyle than older men who live alone [20, 22, 24]. In other words, older women are more likely to experience objective social isolation while older men are more likely to experience subjective social isolation.
- *Health problems*. Older adults with serious health problems may be at greater risk of social isolation [25]. Individuals with severe physical chronic disabilities, cognitive decline, or depression may be less able to sustain meaningful relationships [6].
- *Poverty*. Seniors living below the poverty line are also among those who may suffer most from social isolation. Of all seniors living alone and below the poverty line, one-third sees neither friends nor neighbors for as much as two weeks at a time, and one-fifth have no phone conversations with friends or family [26] [11].
- *Aging of the Baby Boom.* Finally, baby boomers are projected to experience greater social isolation given their lower rates of marriage, high levels of divorce, and fewer children [27-29]. For example, female baby boomers who have ever married bore, on average,

less than two children who survived to age 40 [27, 28]. Divorce often results in weakened intergenerational bonds, lower contact with children and presumably less emotional support in old age [30, 31].

Promoting Social Integration and Reducing Social Isolation

Social integration, the opposite of social isolation, has been found to be generally beneficial to health across adulthood into old age. Social integration is most often defined as participation in a broad range of social relationships and activities [32]. Social relationships and participation in activities, moreover, constitute available sources of social support if and when it is needed. Although the type of social support provided must match the type of support needed, many researchers emphasize that it is often the *perception* that even one reliable resource will provide appropriate help when needed that is the critical factor in social support operating as a stress buffer [33-36].

Social integration is often considered in terms of a behavioral component – active engagement in a wide variety of social activities and relationships – and in terms of a cognitive component – a sense of community and identification with one's social roles [32]. These two components suggest that there may be an important distinction to be made between the roles themselves and the meaning experienced from participation in the roles, however, this distinction between objective and subjective aspects of role occupancy is not entirely clarified in the literature. Interventions can target behaviors, by providing opportunities for engagement, or they can focus on increasing older person's positive assessment of their existing roles and relationships.

Individuals who actively engage in meaningful roles (such as friend, volunteer, church member, parent) are less likely to experience mental illness, such as depression [37-40], are less likely to develop health problems and more likely to practice good health habits and appropriate self-care during recovery [41, 42], and are less likely to die than those who are less actively engaged. Some controversy remains over whether social integration itself promotes good mental and physical health or whether good mental and physical health encourages better social integration. Berkman [43], however, notes that higher social integration is associated with better physical health even among groups defined by their social class.

In summary, a substantial amount is known about the causes of social isolation and about its negative effects. It is clear that a substantial proportion of older people are vulnerable, and that serious consequences can occur. The remainder of this report describes scientifically tested strategies for increasing social integration among older adults in a larger effort to reduce social isolation and its negative consequences.

Evaluating the Effectiveness of Social Isolation Interventions

All of the reviews synthesized in this report agree on two points: From a scientific perspective, there are few intervention studies of social isolation and integration among older adults and that, overall, the results have been disappointing [1-3, 5, 33]. Most interventions have involved offering peer support to patients with serious, life-threatening diseases in order to improve health outcomes. Thus, although many people believe that programs to reduce social isolation (either objective or perceived) can work, there is little hard evidence from randomized controlled trials that existing programs have major effects.

The following evaluation relies on Cattan et al.'s recent systematic literature review [2] which examined the effectiveness of health-promotion interventions that target social isolation and loneliness among older people, as well as a closer examination of the fifteen randomized controlled studies reported in Cattan et al. [2].

Cattan et al.'s review included studies that investigated social isolation or loneliness or both of these states. The present evaluation includes randomized controlled interventions that are deemed effective or ineffective by Cattan and colleagues. Effective interventions are those which demonstrated a significant reduction in social isolation and/or loneliness. Ineffective interventions are those interventions which did not demonstrate significant changes in either of these outcome measures.

The types of interventions included in this evaluation are group peer support, one-to-one support, and service provision. Effective and ineffective interventions are presented in the sections below. Targeted outcomes in the following studies include the reduction of social isolation, alienation, and loneliness and the increase of social activity level, network size, formal and informal support, and social integration. Populations targeted include older men and women who were living alone, physically inactive, and impaired or frail. Two studies targeted caregivers of older adults.

Group Peer Support Interventions

Group peer support interventions typically employ a professional leader or facilitator to create a peer culture based on mutual disclosure, aid, and a sense of belonging. Such groups involve no diagnosis of illness and screen out the most distressed participants. The sense of

belonging and group cohesion derive from a closed membership that is mutually identified with a particular problem [44].

Effective Interventions

Overall, six of the eight group interventions demonstrated effectiveness. The intervention strategies ranged from a more hands-off facilitated self-help approach to well-structured interventions involving regular exercise or emotional expression and release.

- Andersson [45]/[46] formed small groups of 3-5 elderly women from the same neighborhood who met in local neighborhood centers to discuss health topics. The women were selected from the same neighborhood to facilitate continued contact after the intervention ended. They met for four sessions over a two month period. The study found that the intervention significantly reduced loneliness and meaninglessness and increased social contact, self-esteem, and participation in organized activities compared to the control group.

- Arnetz & Theorell [47] helped tenants in a senior citizen's apartment building to organize classes in botany, art, history, music, and other topics, and to arrange social activities including picnics and outings such as visits to the theatre. Staff members of the apartment building were given a course in gerontology, specifically, the practical implications of self-help and the need to control one's own environment. After six months there was a significant increase in social activity compared to that of the control group whose activity level was kept at the pre-trial level. The experimental group members also started to spend more time out of doors and in activities not arranged by the intervention.

- Hopman-Rock and Westhoff [48] provided education and physical exercise to physically inactive older men and women in community centers. The maximum size for the groups was 25 members, and groups met for six 2-hour sessions. One hour of the sessions consisted of education topics including successful aging, exercise and motility, wholesome food, safety in and around the home, physical and psychological resistance, and infirmities in old age, taught by a peer educator. The second hour consisted of an exercise program of warm-ups, upper, lower, and whole body exercises, and cool down exercises, and was facilitated by a professional exercise instructor. Although the study examined physical health outcomes mainly, it did include a single-item measure of loneliness ("I feel lonely," on a scale of 1-5 with 5 meaning not lonely at all.). Participants demonstrated a statistically significant decrease in loneliness from pre-test to follow-up.

- Caserta and Lund [49] offered 8 weekly bereavement self-help support groups to 339 bereaved men and women aged 50-89 years. Groups met in local community centers, libraries, and housing complexes and contained an average of 6 members. As self help groups, they were facilitated by peers and primarily provided emotional and social support. Groups were designed to help participants to a) accept the reality of loss; b) experience the pain in grief; c) adjust to the environment minus the deceased; and d) reinvest emotional energy in other relationships. Participants experienced significant differences in loneliness at 10 months after the intervention. In addition, those who maintained some form of contact with group members outside the group continued to decrease in loneliness 2 years later, while those with no outside contact did not.

- Rosen and Rosen [50] provided group counseling to a group of older men and women with mild mental impairment. A high percentage of these adults lived below the poverty level and were functioning adequately, only not at the level of their peers. The groups were led by a paraprofessional. Group discussions began with things that happened to members in the past week, which most often led to a focal topic for the session. Members were encouraged to make contact outside the sessions. The group met for 40-49 sessions over a period of 12-15 months. The authors report that the sessions helped members to realize that they all were facing many similar problems centering on the acceptance of loss, and that sharing past experiences and current feelings increased the intimacy among group participants. There was a significant increase in activity level and a significant reduction in perceived loneliness in the treated group compared to two control groups: one group of comparable older adults in need of mental health services and one group of active senior center participants with no need of mental health services.

  What is especially interesting about this study is the maintenance of effects over time. The amount of time the treated MH group spent in household activities increased significantly over a one year period. The proportion who wanted to do more and who actually engaged in more activities increased from 54% to 78%. Participants engaged in such activities as baking and fancy sewing, arts and crafts, and social interactions. Not only were the participants in the MH group more active at home and at the centers, but their reported attendance at social functions other than at the senior centers was significantly greater.

- Toseland [51] also tested whether group counseling benefits lasted over time, although this intervention focused on middle-aged women caregivers of adults over the age of 80 years. Sixty-six mostly white married women aged 49-53 were randomly assigned to either professionally-led group counseling, peer-led group counseling, or no treatment. Peer and professionally-led groups met for 8 weekly 2-hour sessions. Professionally-led groups were encouraged to spend half of the session on education and discussion and the other half on problem solving and to integrate supportive intervention techniques throughout the session. The education topics included caregiver emotions and feelings, care receivers' reaction to illness, self-care to avoid burnout. The problem-solving component included identifying and developing strategies for solving problems. The peer-led groups were less structured and used a self-help approach. Mutual support, sharing of common concerns, and the free exchange of information and coping mechanisms characterized these groups. Both groups encouraged ventilation of stressful experiences, validation and confirmation of similar caregiving experiences, affirmation of members' ability to cope, praise for providing care, and support and understanding for those struggling with difficult situations.

  At one year, participants in the peer-led group continued to report significant gains in the size of their informal support network and a reduction in social isolation. Participants in the professionally-led group also reported significant gains in network–size and a reduction in social isolation at one year compared to baseline, however the gains were reduced at both six-month and one-year follow-ups.

Ineffective Interventions

The remaining two group interventions arranged internet access for the participants' use, one in the home, the other in the common areas of congregate housing.

- Brennan, Moore, & Smyth [52] linked primary caregivers to Alzheimer's patients who were living at home to a computer network that provided information, decision-making support, and group communication. The median age of caregivers was 64 years. Participants received an initial home interview, a 90-minute training session, monthly phone calls on usage, and a final interview at 12 months. The training session for the experimental group included delivery and installation of the computer and a demonstration of computer functions (email, a public bulletin board, and an anonymous question and answer segment). Caregivers could access the computer 24 hours a day at no charge. Although a content analysis of care-giver messages to an Internet forum showed that the system was mostly used for social support, access to the computer network did not significantly reduce perceived social isolation.

- White et al. [53] also provided internet service but to older adults living in congregate housing. One hundred men and women were randomly assigned to a waitlist control group or to have computer and internet access, email training, access to a tutor, and nine hours of small group training in six sessions over a two-week period. Email access was available for five months. The trainer was a young college graduate with good internet skills. There was no statistically significant difference in loneliness at the end of five months, although there were trends in the positive direction.

Summary and Comments

The basic methods used in the group interventions were discussion, self-help, exercise, and skills training. Six of the eight interventions described here and in Table 1 were effective in either reducing loneliness and or increasing social integration. In four of the six effective interventions, researchers utilized proximity to increase the likelihood of continued contact and support - group activity or counseling was provided to older adults living in the same neighborhood.

A most important characteristic of these interventions is that they are *group* interventions. Group interventions inevitably involve group members talking to each other, and the reviews we consulted consistently listed group interventions as having the highest likelihood of success in reducing social isolation. Topics discussed ranged from health, science, art, social activities, and successful aging, to discussions of current problems. Three of the successful interventions encouraged mildly depressed, caregiving, and bereaved adults to express negative emotions regarding losses or stressful life events. The three group interventions that encouraged expressions of emotions for those experiencing stress not only demonstrated a significant reduction in social isolation at the end of the intervention, but demonstrated increasing gains at one and two-year follow-ups. All three of these interventions demonstrated sustained benefits over time. Other research has demonstrated the long-term benefits of such emotional expression [54, 55].

Both of the ineffective interventions used the internet (e-mail) to provide information and group communication to seniors in their homes or in congregate housing. One provided Alzheimer's caregivers with access to information through the internet and the other provided general internet and email to residents in congregate housing. These findings raise questions regarding the benefits of direct versus indirect interaction with others in reducing social isolation.

One-to-One and Service Provision Interventions

One-to-one support interventions are interventions in which a relationship is temporarily grafted onto an existing social network and most often used with individuals who are seen as lacking sufficient social support [56]. Service provision interventions offer services to older adults that might facilitate social integration (e.g., transportation). Other types of interventions include mobilizing the existing social network, which aims to enrich and improve support provided by friends, relatives, co-workers, and neighbors, and neighborhood and community-level interventions, which seek to enhance the functioning of people in existing networks, but these types are not included in the present evaluation because we found no randomized controlled trials of such interventions.

Of the controlled one-to-one interventions located, only one had positive findings of effectiveness; these findings, however, disappeared over time. Thus far, the research has not found one-to-one interventions to be effective with isolated older persons.

Effective Interventions

- McEwan et al. [57] conducted a study involving one 45 minute home visit by a nurse to 296 patients aged 75 or more years. The visit included advice; written health information; a health assessment of activities of daily living, social functioning, sensory functions, mental and emotional problems, blood pressure, urinalysis, and compliance with medication; and referrals to further services if required. The study demonstrated a significant reduction in social isolation and loneliness, however, the effect wore off at follow-up because the practice-nurse team did not continue the intervention (Pearson, 2000).

Ineffective Interventions

- Clark et al. [58] provided a home visiting service to 523 general practice patients. A lay case worker offered assistance at home visits over a two-year period, including arranging visits to another older person or outings with voluntary organizations, meals on wheels, assisting with arranging finances, installing safety chains and spy holes onto doors, arranging for volunteers to do gardening or decorating, referral for assessment for a bath nurse, making appointments to see the family doctor, and seeking advice from the continence nurse. No significant difference in loneliness from time one to time two was found.

- Hall et al. [59] provided personalized home visits to 201 frail men and women over the age of 65 years who were newly admitted to personal care at home. The control group received standard home care services, which included screening and pre-admission assessment, arrangement/purchase of needed services, and review at three months and at least yearly thereafter. The treatment group received the standard home care services plus a personalized health care plan. The personalized health plan was based on the participants needs in the areas of health care, substance use, exercise, nutrition, stress management, emotional functioning, social support and participation, housing, finances, and transportation. Nurses visited for an 18 month period. No significant differences in loneliness were demonstrated.

- van Rossum et al. [60] provided home visiting to 580 older men and women between the ages of 75 and 84. Participants were visited by nurses four times a year over three years.

No physical examinations were performed, however, the nurses discussed health topics and gave information and advice. Referrals were made if necessary. No significant differences in loneliness were found.

- Sorensen et al. [61] coordinated medical services in the home and at the hospital for 217 patients aged 65 and older over a two month period. The intervention demonstrated no effectiveness in reducing loneliness (this article is published in German and this is reported solely from the Cattan et al., [2] review).

- Heller et al. [62] arranged telephone dyads among 265 low-income, community dwelling, low-income elderly women (median age 74 years), who reported low levels of friend support or high levels of loneliness. For the first 10 weeks, interviewers called to discuss events of the week. In the following 10 weeks, participants were either called by an interviewer or a similar other. Neither the calls from staff or peers demonstrated effectiveness in reducing social isolation or loneliness.

Summary and Comments

With the exception of Sorensen et al. [61] and Heller et al. [62], the one-to-one randomized trials involved visits to older adults living in their homes. Only one of the interventions was able to demonstrate a significant effect in reducing social isolation and loneliness [2]. McEwan et al. [57] reduced isolation temporarily, although the effects disappeared when the intervention ended.

Summary of Review Articles on Social Isolation among Older Adults

Four major reviews are featured in the current review of the literature on social isolation among elderly adults [1-3, 5, 33]. From these reviews and the randomized controlled trials on which they are based, we have described the most rigorously tested strategies for increasing social integration among older adults and thus, supporting their continuing health and well-being.

Several features of research on social isolation are clear. First, scientific experts agree that social isolation among older persons has serious negative effects on health and well-being. Second, only a very small number of interventions have been conducted that scientifically test ways to combat social isolation. Thus, a pressing need for further research exists. Third, a few interventions have been found to be effective.

Effective interventions shared several characteristics: 1) They were group interventions with a focused educational component. 2) They targeted specific groups, such as women, care-givers, the widowed, the physically inactive, or people with mild mental health problems. 3) They used experimental samples that were representative of the larger target group. 4) They enabled some level of participant and/or facilitator control or input. 6) They were developed and conducted within an existing service [2]. In addition, many recruited from neighborhoods and existing communities to help insure that group members continued to meet after the intervention ended. Group interventions that included discussions of negative emotions were able to demonstrate continued and increasing effectiveness at one ad two-year follow-ups.

The predominant characteristics of the ineffective interventions are that they involved indirect contact between the participant and others or they were one-to-one interventions conducted in people's own homes. Interestingly, there is some evidence that one-to-one support

in the form of befriending, home visiting, or caregiver support is one of the most frequently provided activities to alleviate loneliness [63-65].

Possible Unintended Negative Consequences

It is important to note that possible negative consequences of interventions to reduce social isolation and increase social integration have also been reported. To restate a point we made in the introduction, there are relatively few scientifically strong randomized controlled trials that have tested the effectiveness of interventions designed to reduce social isolation. In addition, only a handful of these trials have included reports about possible negative impacts of the interventions on individuals. This lack of reports of negative impacts could indicate that these interventions have few potential negative effects, but it might also be the case that such effects were not consistently monitored.

Heller and colleagues [62] (reported above) conducted extensive post hoc analyses to determine why their peer support telephone dyad intervention for elderly women failed. The researchers concluded that the peer support intervention did not succeed because it was the "wrong" intervention. Data collected after the intervention indicated that the elderly women valued family support more highly than friend support, making it unlikely that friend support could substitute for inadequate family support. The authors reported that the "Interviewers noted embarrassment and shame among women who reported that family members did not value them or offer assistance." [62], p. 69. The researchers speculated that in the pilot study it was easier for older women to admit that they were lonely and lacked friends rather than to admit that their families were not providing enough support.

Potential negative impacts may also surface in group level interventions. Baumgarten and colleagues [66] attempted to replicate the social activation intervention conducted by Arnetz and Theorell [47] (reported above). Baumgarten and associates developed and evaluated a mutual help network in an elderly apartment residence in a large city (the control was a similar building nearby). Their hypothesis was that increased socialization would increase the number of active social bonds in the building, increase satisfaction with support, and reduce depressive symptoms. Their intervention did not succeed: in fact, in the intervention building satisfaction with support decreased and depressive symptoms increased relative to the control apartment building. Although in their post hoc analyses they found some groups in the intervention building who may have benefited more (e.g. those who were disabled reported an increase in social contacts; those who came to more activities reported less of a decrease in support satisfaction than those who attended fewer activities) they also found that those who took part in more activities had a larger increase in depressive symptoms.

Additional evidence for a potential negative impact of group interventions (although it comes from a study not designed to reduce social isolation among the elderly) surfaced in an RCT conducted by Hegelson and colleagues [67]. In this study, the researchers compared the effectiveness of education group interventions and peer discussion group interventions on adjustment to breast cancer. Most troubling to the researchers, women assigned to the peer discussion groups reported more negative encounters with their existing social networks, suggesting to the researchers that this arm of the intervention may have caused women to "alter perceptions of existing support or disrupt relations with family or friends." [67], p. 346.

Discussion and Conclusion

This review covered much of what researchers have learned about social isolation and integration. It makes visible for us the variety of subgroups of older adults who are at risk including older women, poor elders, and baby boomers entering old age, among others. More important for our particular purposes are the older New Yorkers who are even more likely than their counterparts in the rest of the country to experience social isolation due to higher rates of poverty (NY: 18%; US: 10%) and disability (NY: 46%; US: 42%) and higher rates of divorce (NY: 51%; US: 45%) or never having been married (NY: 11%; US: 4%) [11]. Those never married may be less likely to have relatives at all.

Social integration is consistently associated with good health and well-being while social isolation is associated with distress and poorer health. Clearly, our ensuing effort in the consensus workshop discussions to strengthen intervention research and to improve practice efforts to reduce social isolation among the growing number of older adults in New York city is important. Although one-to-one interventions appear to be the most popular type of practice intervention, the body of research reviewed here suggests that targeted group interventions are more effective. Intuitively, this seems reasonable given that groups provide greater opportunity for encountering at least one other with whom there is resonance or shared interests or concerns. Similarly, interventions that provide direct contact between older adults also seem intuitively superior to interventions that provide only indirect contact.

Researchers who arranged for group meetings of older adults who live in the same neighborhood or encouraged member contact outside the sessions, seem also to grasp the significance of the group, of direct contact, and also of regular contact. Gottlieb (2000) discusses the importance of focusing on relationships that participants can rely on months and years beyond the period of active intervention.

Finally, interventions that allowed for the expression of emotions not only maintained effectiveness at one and two years post intervention, but they demonstrated an increasing effect. This raises interesting questions about the mechanisms by which aspects of social integration are associated with the expression of emotions.

To reiterate, these descriptions are provided as a starting point for discussions between researchers and practitioners about how best to investigate and to actually improve social integration among older adults living in New York city.

- Do practitioners think of social isolation in the same ways as researchers?
- Do practitioners seek to relieve social isolation as an end in itself, or do practitioners usually seek to find socially isolated elders in order to provide them with needed services?
- What is the appeal of one-to one versus group social isolation interventions?
- How might we compare and test the merits of different intervention approaches to the subjective and objective aspects of social isolation?
- How does the Surgeon Generals indication that mental disorders tend to be under-diagnosed in older people match with social isolation intervention and research efforts?
- How might we tailor this discussion to the special needs of the particular New York city populations of women, men, the poor, and of aging baby boomers?

These are just a sample few of the questions we might discuss. We are looking forward to the dialogue.

Appendix: Scientific Concepts defined and distinguished

- Social integration - Technically, this term refers to the study of social networks, specifically, the number of interpersonal ties, however, researchers use it in a variety of related ways. Pillemer et al. [5] use the term to mean "the entire set of an individual's connections to others in his or her environment, which includes participation in meaningful roles (p.8)." It has been used to denote social embeddedness or the degree to which an individual is embedded in a set of relations in which he or she gives and receives affective support and social approval [68]. The term has also meant having a diverse range of relationships [69, 70], and involvement in a range of social activities [71].
- Social network - the web of social relationships that surround an individual and the characteristics of those ties [72-74].
- Social isolation - the lack of significant contact with kin, neighbors, coworkers, and friends, and the lack of significant roles.
- Social support – the provision of psychological and material resources by kin, neighbors, coworkers, friends, and the broader social network.
- Perceived social support – the belief that psychological and material resources will be provided by kin, neighbors, coworkers, friends, and the broader social network when needed.

Table 1: Summary of Randomized Controlled Trials of Interventions to Prevent Social Isolation among Older Adults

Study	Participants	Activity/Setting	Intervention	Measures/Results
		Group		
Andersson, 1984/85	108 women living alone, on senior citizen apartment waiting list	Education/discussion in neighborhood centers	Four group meetings over 2 months. Women living in the same neighborhood discussed health topics, 2 months	Women experienced less loneliness, more social contacts, participated more in organized than control group.
Arnetz et al. 1982	60 older men and tenants who were referred to the apartment building by a central agency which arranges housing according to medical and social needs.	Social activation/self-help support in senior citizen apartment building	Tenants helped to organize groups in botany, art, history, music, visits to the theatre, etc. Encouraged to take more responsibility for daily chores; 6 months	Participants experienced a significant increase in social activity level. members started to attend activities outside the actual program and in general spent more time out of doors compared to controls.
Brennan et al. 1995	102 primary caregivers of Alzheimer's patients who were living at home (men and women) median age, 64	Caregiver support/internet group discussions in home	Participants received an initial home interview (T1), a 90 minute training session, monthly phone calls on service use, home delivery and installation of the computer and coaching, with a return demonstration for computer functions, and a final interview at 12 months.	Intervention did not lead to decreased perceived social isolation compared to controls.

Rosen and Rosen, 1982	117 men and women with mild mental health problems. High percentage living below the poverty level	(Paraprofessional) Therapy/counseling, self-help support in senior citizen center, rural GA	Group meetings in which participants discussed things that had happened to them recently, and were encouraged to make contact between sessions; 12-15 months or 40-49 sessions.	There was significant improvement in activity level and morale and significant reduction in perceived loneliness in the treated MH group compared to untreated MH group and NMH.
Hopman-Rock et al., 2002	448 physically inactive men and women, aged 51-89	Education/physical activity in community centers across the country (Netherlands). Maximum group size at any one location was 25.	Six sessions consisting of one hour of health education by a peer educator and one hour of exercise taught by a professional exercise instructor.	There was a statistically significant improvement in loneliness at follow-up compared to controls.
Toseland, 1990	66 women caregivers aged 49-53 and care receivers aged 80-81.	Caregiver support/counseling Randomly assigned to 12 groups, 4 led by professionals, 4 led by peers, and 4 no treatment.	Professional leaders spent half the time on education and discussion and the other half on problem-solving/support. Peer-led groups were not as structured.	Reported increases at posttest in both groups. Participants in the peer led group continued to report significant gains in the size of their informal support network at 1 year.
Caserta and Lund (1996).	339 bereaved men and women aged 50-89 years	Community centers, libraries, housing complexes. The groups met at sites in the community.	Bereavement support/self-help. Closed self-help groups facilitated by peers or counseling professionals 8 weekly meetings.	There were statistically significant decreases in depression and loneliness at 10 months after the intervention. Those who reported some form of contact with other group members outside the

				meetings continued to experience a decrease in loneliness years later .
White et al., 2002	100 men and women volunteers aged 59-83.	Training and one-to-one support in congregate housing, nursing home	Computers and internet access provided on site	No statistically significant difference in loneliness, though there were trends in the positive direction.
		One to One		
McEwan et al., 1990	296 general practice patients, aged 75+ years	Home visiting, assessment in home	In one 45 minute visit, a nurse assessed health needs and made referrals and provided information.	Significantly less perception of loneliness was experienced by treatment group compared to controls at 20 month follow-up.
Clarke et al., 1992	523 general practice patients living alone, aged 75+ years	Home visiting/ service provision in home	Lay Case worker offered assistance at home visits, up to 2 years.	Ineffective at reducing social isolation.
Hall et al., 1992	201 frail men and women, aged 65+ years	Living in their own homes, newly admitted to personal care at home by the LTC program	Eighteen months of nurse visits. Treatment group received standard LTC services plus visits from the project nurse who helped each to devise a personal health plan based on his or her needs	Ineffective at reducing social isolation.
Van Rossum, et al 1993	580 men and women between the ages of 75 and 84 living at home	Home visiting, information, advice	Four nurse visits a year over three years for intervention group. Nurses discussed health topics in a broad sense with the	Ineffective at reducing loneliness.

			participants and gave information and advice.	
Heller, Thompson et al. (1991)	265 low-income, community dwelling elderly women. Median age 74 years.		Peer support telephone dyads were established in groups of low-income elderly women who reported low initial levels of friend support or high loneliness. .	No improvement in sense of loneliness.
		Service		
Sorensen et al. 1989 **From review only**	217 patients, aged 65+ from one hospital	Coordination/ provision of services in home and hospital	Coordination of services on discharge, 2 months	Ineffective at reducing loneliness.

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