THE RETIREMENT RESEARCH FOUNDATION

GRANT HIGHLIGHTS

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Prairie State Legal Services Protects Nursing Home Residents from Involuntary Transfers

In 2016, RRF awarded a third-year grant of $53,500 to Prairie State Legal Services (PSLS) for the Vulnerable Elder Rights Project. The goals of the project were to build the capacity of PSLS attorneys to serve older adults with complex cases more efficiently and effectively and to take a pro-active approach on high-priority legal issues by reaching out to and educating providers, ombudsmen, and advocates about elders' legal rights, provider obligations, and PSLS services.

The focus of the project has been primarily on increasing and improving legal representation for long-term care clients who have experienced an involuntary discharge or transfer from a nursing home and to promote legal system reforms. Often the involuntary transfer is due to delays or denial of Medicaid payment, the principal nursing home payer. Funding enabled PSLS to support the Vulnerable Elder Rights attorney, the point person who coordinates the project, conducts training for PSLS attorneys, and does outreach to service providers and consumers.

PSLS saw the number of cases involving nursing home clients increase significantly over the three-year period, from 97 in the first year to 139 in the third year. The number of cases that received extended representation (advocacy with an adverse party such as a government agency or nursing home versus brief legal advice, investigation, and counseling) more than doubled, from 28 in the first year to 59 in the third year. PSLS was able to prevent involuntary discharge for nearly 100 cases in the final year of funding.

PSLS also experienced significant growth in the number of cases involving Medicaid delays or denials, which threatened elders' nursing home status. During the three-year period, the number of such cases increased from nine in the first year to 53 in the third year. PSLS was able to resolve 82% of the cases, which included restoring or obtaining Medicaid coverage.

In addition to its success on individual cases, the project led to some important system reforms. It improved the state's administrative hearings process for involuntary transfers. It also gained cooperation from several nursing homes to include information about Medicaid denials and transfers in their information and materials for residents.

The Vulnerable Elder Rights attorney provided several in-service trainings as well as technical assistance and educational resources for PSLS attorneys. A day-long training was conducted on discharge laws and procedures. Other trainings included the overhaul of federal nursing home regulations and long-term care Medicaid coverage

(basic and advanced training). The attorney also assisted PSLS staff on legal strategies, research, motions, and preparation for hearings.

PSLS participated in trainings for other attorneys. The Vulnerable Elder Rights attorney presented a session on non-long-term care Medicaid appeals for 30 attorneys at the 2017 Illinois Legal Aid Advocates Conference. She also presented on the revised federal nursing home regulations to 40 attorneys at the Illinois Bar Association's Elder Law Bootcamp. She wrote an article on rules, regulations, and cases pertaining to involuntary discharges from nursing homes, which was published in the Illinois Bar Association Elder Law Section Council Newsletter.

PSLS reached out to several service providers about the complex legal issues that it handles, which contributed to a huge increase in referrals. PSLS educated several regional ombudsmen, the staff of the Western Illinois Area Agency on Aging, the McLean County Bar Association, and others. PSLS staff also conducted educational sessions for hundreds of seniors and their caregivers at assisted living facilities, resource festivals, and other venues.

One of PSLS' goals was to examine alternative elder law service structures to determine which would work best for its organization. Because it has had such success with a specialized project attorney, PSLS decided to continue with this position. In addition, it will designate an attorney in each local PSLS office to become an expert on issues impacting older adults and serve as a resource and trainer for the other staff. The designated attorneys will form an elder law task force, which will meet quarterly either in-person or via webinar. The Vulnerable Elder Rights attorney will continue to maintain a shared drive with sample motions, pleadings, documents, and presentation materials, and she will encourage all PSLS attorneys with relevant information to add it to the folder. The senior legal helpline, which was launched six years ago with RRF funding, will continue as a part of PSLS' elder legal services model.

PSLS has demonstrated a real commitment to improving its services for vulnerable elders. Its ability to sustain the Vulnerable Elder Rights attorney's position is a testament to the serious attention PSLS paid to organizational capacity building as well as to the needs of vulnerable elders. PSLS' program could serve as a model for other legal service providers.

Project Promotes Housing-Health Services Models

In 2016, RRF awarded a one-year, $100,000 grant to the National Center for Healthy Housing (NCHH) to develop a Technical Assistance Resource Center to promote and enable the replication of proven, sustainable models of affordable senior housing with coordinated health and supportive services. The project's objectives were to identify promising models of service-enriched, affordable senior housing; determine viable financing models to fund services to seniors in low-income housing as they adopt these new models; and foster the launch of a "Well-Home Network," intended to advance senior housing with services over the longer term.

NCHH developed case studies describing three existing U.S. housing-based service models as exemplars for others to follow. The models included Support and Services at Home in Vermont, Housing with Services in Oregon, and the Richmond Health and Wellness Program in Virginia. Rhode Island and Minnesota were selected for housing-based service model development. A white paper was produced with an overview of payment and delivery options as they existed before the Affordable Care Act and the additions and expansions enabled by the legislation. Through the project, strong relationships were established between NCHH, staff at the U.S. Department of Housing and Urban Development, and leaders in geriatric medicine.

Most significantly, the project developed working relationships with state legislators to formalize the National Well Home Network of housing providers and other stakeholders to advocate for the broad adoption of housing-based service models. The Network comprises technical advisors, implementers, potential funders, advocates, and government representatives across the country working to promote senior housing with services. Several meetings with government departments, potential investors, and program implementers have been held. NCHH has begun the development of a unified database with information about the characteristics, needs, and well-being of all residents in housing projects that participate in the Network.

A symposium about the project was held at the 2017 American Society on Aging meeting. The project also generated a white paper, a power point presentation from the ASA symposium, and several briefs.

National Council on Aging Promotes Elder Economic Security Standard and Companion "Insecurity Rate"

In partnership with the Gerontology Institute at University of Massachusetts Boston (UMass Boston), the National Council on Aging (NCOA) continued to use the Elder Economic Security Index (Elder Index) and its newer companion, the Elder Economic Insecurity Rate, to increase public awareness and influence decision makers to make programs more responsive to elders. In 2014, RRF had awarded a two-year, $97,000 grant to Wider Opportunities for Women (WOW) for the project. However, at the end of 2015, WOW closed and NCOA agreed to complete the project.

UMass Boston, which partnered with WOW to create the Elder Index, took responsibility for the first complete update of the data since it was initially released in 2011. The Elder Index is a measure of the costs faced by households that include one or two older adults age 65 or older, living independently. The Elder Index defines economic security as the income level at which elders are able to cover basic and necessary living expenses and age in their homes without relying on benefit programs, loans, or gifts. The Elder Index is calculated for every county in the U.S. Statewide and national averages are also generated. Elder Index expenses include housing, food, transportation, healthcare, and basic household items such as clothing, a telephone, and hygiene and cleaning supplies. The Elder Index is considered to be far more accurate than the federal poverty level or supplemental poverty index because it

includes all basic and necessary living expenses and takes geographic differences into consideration.

The Elder Economic Insecurity Rate (Insecurity Rate) relates to the Elder Economic Security Index. The Insecurity Rate is the proportion of retired seniors with annual incomes below the Elder Index. For example, the Elder Index for a single senior homeowner without a mortgage is $20,076. In 2012, 38% of single senior homeowners without mortgages had incomes below $20,076. Thus, the Insecurity Rate for this segment of the older population was 38%. The Insecurity Rate provides significant information that advocates can use with other economic and well-being statistics, to inform and bring about changes to improve the quality of life for lower-income older adults.

NCOA disseminated the Insecurity Rate and Elder Index tools at the state and federal levels through webinars and conferences and provided technical assistance to advocates on the use of the tools. NCOA created a guide to using the Elder Index and information on strategies for advocacy and outreach. It created a template that allows agencies to identify state-specific Elder Economic Insecurity Rates for their work.

NCOA also made the data publicly available on its website. The updated website (http://www.ncoa.org/elderindex) was launched in late September 2016. Since then, nearly 10,150 sessions have been started on the site, and more than 300 people have viewed the toolkit materials. NCOA trained more than 200 participants at the Benefits Enrollment Conference on how to use the tool. Two webinars were held on the Elder Index and the Insecurity Rate. One included a discussion on the 2016 Elder Index data and how three states have been using the data in their advocacy efforts. A second webinar introduced NCOA's network to the economic security needs of Latinos, based on Elder Index data, and provided ideas on how to educate Latinos on good financial practices.

Advocates have used the Insecurity Rate and Elder Index tools in several ways. The New York StateWide Senior Action Council used the Elder Index in a panel discussion with the Black and Puerto Rican caucuses and state elected officials. It launched a statewide campaign in 2016, focused on the homecare workforce shortage and used the tools to highlight the need for fair wages. The Washington Association of Area Agencies on Aging used the Elder Index to make their case with state policymakers for strengthening pensions and to educate the legislature on the need to prepare for an increase in the number of older adults in the state. The National Alliance for Retired Americans and the Leadership Council of Aging Organization's Income Security Workgroup used the data for their federal advocacy agendas.

NCOA conducted media outreach to educate consumers about the tools. There were 23 stories mentioning the Elder Index, representing nearly 23 million potential readers. NCOA also promoted the tools in its newsletters, reaching more than 60,000 subscribers, and social media accounts, with a following of nearly 100,000 individuals.

Study Identifies Impact of Proposed Changes on Social Security and Medicare

In 2015, RRF awarded a two-year, $190,461 grant to the National Committee to Preserve Social Security and Medicare Foundation (NCPSSM) to produce and disseminate an analysis of the impact of proposed changes to Social Security and Medicare on local communities and at-risk older adults. NCPSSM proposed to develop a comprehensive profile of Social Security beneficiaries at state, county, and congressional district levels. The organization also proposed to assess the impact of raising the age of eligibility for Medicare from 65 to 67. The goal of the study was to provide user-friendly information for grassroots efforts to protect these programs in the face of increasing demographic and political pressures.

NCPSSM used two tools to demonstrate Social Security's economic impact. The first was the economic stimulus effect, which is the multiplier effect of Social Security benefits as they are spent and cycle through state and local economies. For example, the state-level multiplier in Illinois is $2.09. This means that every dollar of Social Security benefits paid in Illinois results in $2.09 of economic activity. In 2014, the $32.5 billion in benefits received by Illinois residents added $63.7 billion to the state's economy.

NCPSSM also used the Regional Social Security Support Index (RSI), a tool that illustrates the level of support or dependency on Social Security for every state and county in the U.S. The RSI is composed of three variables: the percent of the population receiving Social Security; Social Security's share of total personal income; and per capita Social Security income. The RSI illustrates the impact Social Security has on the entire population of a region, not only the individuals receiving benefits.

A principal component analysis was used to reduce the three variables into one component that represents all of them. This allowed NCPSSM to illustrate the level of support or dependency in any given year and over time. When examining changes from 2008 to 2013 at the state level, only North Dakota decreased its reliance on Social Security. At the county level, only 197 out of 3,108 counties (6.3%) decreased their support over the same time period. While the overall national trend showed increasing support by Social Security, a wide variation existed across all states and counties.

NCPSSM's second analysis focused on the potential impact of raising the Medicare eligibility age from 65 to 67 on older women and minorities. Due to existing disparities, both of these groups are more dependent on Medicare and Medicaid than are other groups. The study showed that raising the eligibility age would result in adverse consequences for both groups. Currently, Medicare covers almost everyone 65 or older, with only 1.1% uninsured. If Medicare eligibility were raised to age 67 and the Affordable Care Act (ACA) remained in effect, by 2019, the percent of uninsured Among those aged 65 and 66 would increase to 18.7%. If the ACA were repealed, the uninsured rate would increase to 37%. This would affect 3.8 million older persons.

NCPSSM produced white papers, chart books, and infographics. Hundreds of press releases describing the results were sent to media outlets at national and local

levels. In addition, results were presented on interactive maps, which allowed grassroots organizers, advocates, and local policymakers to extract relevant data. NCPSSM sent the findings to all members of Congress and to 72 organizations in the Leadership Council of Aging Organizations. Findings also were published on NCPSSM's Facebook page and presented at national meetings.

Culture Change Increases Well-Being of Residents in Long-Term Care Facilities

In 2015, RRF awarded an 18-month, $149,776 grant to LeadingAge, a national membership association of nonprofits providing housing and support services for older adults. With RRF's grant, LeadingAge conducted an evaluation of Promoting Excellence Alternatives in Kansas (PEAK), an incentive program designed to promote the adoption of long-term care culture change by Kansas nursing homes that accept Medicaid.

"Culture change" refers to the transformation of long-term care facilities from a medical culture to one that recognizes and responds to the individuality of each patient. Pre-study data revealed that 85% of nursing homes nationally have begun implementing culture change. However, the impact of culture change on long-term care facilities was unknown due to insufficient research and inconsistent findings. The PEAK evaluation sought to study resident and staff outcomes across different stages of culture change and determine whether outcomes of culture change get stronger as the extent of culture change increases (i.e., Is there a "dose response" relationship between culture change and resident and staff well-being?).

PEAK provides nursing homes with a financial incentive to adopt and advance culture change. All facilities receiving Medicaid reimbursement were rated on their stage of culture change adoption in 2010 when PEAK began, and every year since inception. At each rating, homes are assigned to one of six "stages" of increasing adoption (from zero to five). Each nursing home that advances its degree of culture change to a higher stage receives a higher monthly reimbursement per Medicaid resident. Facilities that mentor other nursing homes in the program can receive additional reimbursements. Facilities must complete a year of training around culture change and produce a plan for their culture change efforts. A contractor was hired to provide the training so that it is consistent across facilities. Roughly 350 nursing homes participate; 110 do not. Trained external assessors evaluate the levels of culture change, based on standardized, intensive site visits.

The study began by identifying variables that might confound the interpretation of conclusions about culture change impact such as type of nursing home ownership, case-mix, and percent of residents on Medicaid. These variables were controlled for in the data analysis so that researchers could determine if improved outcomes result from culture change alone.

The researchers then determined the answers to the study questions about culture change outcomes for residents and staff, including resident health, quality of life and satisfaction, staff turnover, and employee satisfaction. The variables and the

source of data for measuring them were charted. Most measures were from the Minimum Data Set (MDS), which is a comprehensive psychosocial and functional assessment that facilities must complete on all residents at least quarterly.

Study results documented impact from culture change efforts for quality of life and clinical markers and made clear that those outcomes emerged at a clinically meaningful level only after facilities progressed to the highest levels of culture change. For example, the study found reduced incidences of depression, pressure ulcers, catheter use, and urinary tract infections among residents, which continued to diminish as the level of culture change increased.

The study noted that because both for-profit and non-profit sites participated in PEAK, the findings are more representative than in previous studies. This is significant, given skepticism that culture change is only viable in better resourced facilities. It was also significant to learn that the non-profit nursing homes continue to be the leaders in culture change. They were more likely to be represented in the group achieving the highest level of culture change.

Study results were disseminated to long-term care providers, state officials, and researchers in aging. The study has been published in the *Journal of the American Medical Directors Association*. LeadingAge also produced policy briefs for state officials and the Centers for Medicare & Medicaid Services.

Study Shows Controlled Whole-Body Vibration Training Reduces Falls

In 2014, RRF awarded an 18-month, $76,824 grant to the University of Texas El Paso (UTEP) for a pilot study to test the effectiveness of using Controlled, Whole-Body Vibration (CWBV) to reduce falls among older Hispanic adults. Falls are the leading cause of injury in old age. One third of older adults fall each year, and many falls result in nursing home placement or death, particularly when a hip fracture occurs. Even if older adults avoid injury from a fall, the experience can be frightening and lead them to restrict their activity as a way to avoid subsequent injury. Inactivity further weakens muscles and can lead to isolation, increasing the risk for depression. Research has found that older Hispanics, who comprise a large share of El Paso's older population, are more likely to become injured during a fall than their non-Hispanic peers.

CWBV is a body strengthening tool in which vibrations are transmitted through the body three times a week for eight weeks, producing physiological and neuromuscular benefits linked to balance. CWBV training involves standing on a specialized platform with knees flexed and feet shoulder-width apart. Vibrations are then delivered intermittently one minute at a time, with a minute rest in between them. Five repetitions are completed at each of the three weekly sessions.

Previous studies documented that CWBV improves balance, muscle strength, mobility, and gait coordination. Because CWBV is easier and tolerated better than exercise programs, it is likely to be of interest to older adults. It is also an intervention

that can be used in many settings. However, previous studies only involved the use of CWBV with older adults as an adjunct to other strength and balance training. UTEP's study was the first to assess whether CWBV alone reduces fall risk and fall rate in older Hispanics as well as, or better than, other interventions.

The randomized trial involved 60 subjects assigned to three groups. Groups A and C received CWBV only, while Group B received a placebo intervention. Group C remained in the study an additional three months so the researchers could test the duration of any benefits from CWBV. Placebo subjects stood on the vibration platform, which did not vibrate but emitted the vibration noise.

The UTEP study got closer to measuring what the "real-world" fall rate would be by using a balance perturbation test. Participants were caused to slip while walking on a treadmill. They were protected by a harness that engaged if the slip resulted in their "falling." The harness caught the subjects and measurements were taken of the amount of tension in the harness ropes. Tension above a set point indicated that the subject would have fallen without the harness.

Fall risk was measured in all three groups using five metrics: balance, functional mobility, muscle strength, peripheral sensation, and fear of falling. Groups A and B were tested at the end of week 8, and Group C was tested at week 20. Researchers decided to measure fall rate only once so that they could avoid "measurement effects," i.e., the possibility that experiencing a test the first time might change how a subject responds to the same test when it is administered again. The investigators were concerned that experiencing the slip procedure once might cause subjects to respond more quickly a second time. With only one measure of fall rate, data analysis focused on comparing harness data results across study groups.

The study found that the use of CWBV alone was able to improve balance and reduce the rate at which older adults fall. Results included significantly improved body balance, muscle strength, sensation level, and functional mobility. The study also found a reduced fear of falling and a lower rate of falls, both in the lab and self-reported outside the lab, relative to the fall rate reported prior to the study. The only reported adverse experience of CWBV was an itchy sensation in the legs after the vibration.

Papers relating to the study have been published in the *Journal of Biomechanics*, *Human Movement Science*, the *Journal of Electromyography* and *Gait and Posture*. Four additional papers are under review for publication.

Chicagoland Methodist Senior Services Completes Market Analysis for New Housing Venture

In 2016, RRF awarded a six-month, $5,000 Organizational Capacity Building (OCB) grant to Chicagoland Methodist Senior Services (CMSS) to engage a consultant to perform a pre-development market analysis for a new senior housing facility on Chicago's north side. CMSS does not currently offer independent housing for seniors who do not qualify for low-income housing subsidies, but are not wealthy enough to pay

the buy-in fees for more traditional, costly continuum care retirement communities. CMSS wanted to determine the feasibility of filling this gap in its continuum of care. A neighboring senior facility, Bethany Retirement Communities (Bethany), had expressed a similar interest in developing market rate housing to expand the base of independent living options for older adults, but needed a partner organization to share the cost of such an endeavor.

CMSS and Bethany entered into formal discussions to develop an apartment building on the north side with market rate rental units for moderate-income older adults who are able to live independently or with minimal support. The project's goal was to obtain ground-level insights to inform a more meaningful, full-scale market analysis and determine the scope of work needed to further assess the viability of a new senior housing facility.

Focus groups were held with 30 older adults from the primary market area for the new housing venture; quantitative questionnaires were administered to the participants. The consultants provided guidance on developing the discussion guides and questionnaires, facilitated the focus groups, and summarized the results.

The project resulted in several key take-aways. It confirmed a desire for housing that would help facilitate engagement but not be a full retirement community. It also gathered suggestions about what an ideal housing setting might include and identified features seniors want in their apartment unit. The project generated a revised concept and financial model with a different configuration of apartments that may make the project more financially feasible. The partners decided to proceed with further market research and financial modeling. An architect and contractor have been engaged for the project.

American Geriatrics Society Promotes Reimbursement for Care of Chronic Conditions

In 2016, RRF awarded a one-year, $40,049 grant to the American Geriatrics Society (AGS) to support its effort to win approval from the Centers for Medicare and Medicaid Services (CMS) for new billing codes related to the care of older adults with dementia and those with multiple chronic conditions. AGS's work on this issue began in 2015 after CMS issued a request for proposals of new codes to cover previously unfunded care management tasks. In response, AGS consulted with its members, partners, and CMS about codes with strong potential to improve care outcomes while driving down overall cost. The services for which reimbursement was sought are time-consuming tasks that involve care planning and coordination; both of which have been shown to improve patient outcomes.

RRF funds enabled AGS to hire a consultant with strong expertise in the coding of physician services. After the codes were reviewed by CMS, they were sent to the American Medical Association (AMA) for a recommendation on the level of payment physicians should receive for newly approved services. The four codes relate to: comprehensive assessment and care planning for persons with dementia; care

management for complex patients; chronic care management; and non-face-to-face acute care management for complex patients.

AGS was able to get the first two codes approved through advocacy with CMS staff; reimbursement for these codes began in January 2017. AGS also worked to assure that the guidance for how to bill for the codes was clear and as easy as possible for its members. CMS has shown interest in the third code. The fourth code is being partially addressed through an alternative method, i.e. CMS altered the descriptions of related codes so that this type of acute care management time could qualify for reimbursement under existing codes.

RRF funds also enabled AGS to protect reimbursements under two additional codes for which the Office of Inspector General (OIG) proposed review and possible revision of payments. These were codes for transitional care management and chronic care management by non-physicians.

AGS offered comments on two additional services for Medicare beneficiaries. These were for non-face-to-face prolonged evaluation and management; and collaborative care between primary care and psychiatry providers for beneficiaries with anxiety and depression. AGS proposed important modifications to enable smoother implementation of these billing codes.

AGS held a webinar to explain the new codes to its members. The live event attracted 40 physicians. The webinar is available on the AGS website at https://geriatricscareonline.org/ProductAbstract/coding-changes-for-2017-focus-on-new-codes-for-geriatrics/W007.

University of Washington Studies Use of Passive Remote Patient Monitoring Technology

In 2015, RRF awarded a one-year, $25,668 grant to the University of Washington (UWA) to conduct a qualitative study on the use of passive remote, patient monitoring devices (PRPM) in Medicare Managed Long-Term Services and Supports Programs in 15 states. PRPMs include global position system devices, sensors, and cameras for identifying clinically significant changes in the activity of frail elders. Sensors can determine if patients spend more time in bed than usual, do not open the refrigerator on a given day, and leave home unexpectedly, etc. Such changes may signal acute illness, accidents, or other changes in well-being that call for intervention.

UWA's preliminary examination of PRPMs strongly suggested that their use is increasing. Medicaid, the primary payer for long-term care services, is primarily responsible for this growth. At the time of the study, at least five states reimbursed for the devices within their home- and community-based long-term care programs, and others reported pressure to permit their use as a substitute for paid personnel. However, the uptake of PRPMs has occurred without the benefit of systematic research to understand their risks and benefits to guide the development of policies for regulating and tracking their use. One notable concern associated with PRPMs is that substituting

them for staff could eliminate a significant source of social interaction for isolated seniors. This could hasten cognitive decline and have detrimental emotional consequences. Other concerns center on privacy, consent, dignity, and potential for misuse of data.

The objectives of the study were to determine current state Medicaid service definitions under which PRPMs are authorized; describe authorization processes; understand any limitations or restrictions on the use of GPS, sensor systems, and/or video monitoring in home- and community-based services; determine mechanisms employed by states to track and evaluate PRPM use; estimate current volume of PRPM use; and identify implementation and oversight challenges perceived to be important by experts with whom states are consulting on this issue. The study involved interviews with 43 experts, representatives from managed care organizations, and policymakers from 15 states.

The majority of states studied did not specifically cover PRPM technologies under unique service categories or specifically prohibit them. Ten states permitted the use of GPS systems. One state, Florida, did not prohibit GPS use and had no policy on the topic. Nine states explicitly allowed the use of sensor systems, while three had no policy but permitted their use. These systems were typically coded as "telecare." Five states allowed the use of cameras. Florida had no policy on use of cameras but did not prohibit their use; Montana and New York also had no such prohibitions but did provide for how their purchase by Medicaid would be coded as "assistive technology."

The study found that few states collected any data on the volume of technology use. However, most reported that demand was not yet high because these tools were relatively new. Washington State was the only exception; it had a specific modifier for GPS coverage and data on its use. Where states covered the cost of these technologies, there were few processes or monitoring mechanisms regarding their use. Requests for the devices came from families or elders and were reviewed on a case-by-case basis. The study also suggested that issues related to elder consent of use of PRPMs need to be addressed. State program managers who were interviewed consistently expressed the need for more research related to: which devices have evidence of benefits; the circumstances under which the benefits occur; and how states are integrating technology and achieving CMS approval to do so.

University of Akron Tests Elders' Deception Perception

In 2014, RRF awarded a two-year, $61,288 grant to the University of Akron (UA) to test whether older adults can be trained to detect deception. If so, they may be less vulnerable to financial exploitation. All studies prior to UA's research were performed on younger subjects. A meta-analysis of these earlier studies concluded that training on verbal (i.e., spoken) markers of lying is the most effective strategy to improve deceit detection. Training younger subjects in visual recognition of others' emotions also improves their ability to detect lies. However, the ability to read emotions in others diminishes with age. For this reason, the UA study compared both verbal cues and emotion recognition training to determine which approach was more effective with older persons.

UA conducted a randomized clinical trial with 150 older persons from the Akron area. Participants with visual, hearing, and/or cognitive impairments were excluded. Subjects were divided into groups of 50 and assigned to one of two treatment groups or to a control group.

One treatment group received 75 minutes of training on spoken cues linked with deception. Participants were taught how these cues relate to lying and common misconceptions about lying. They learned to recognize and look for spoken cues proven to be linked with deceit. Subjects were also given the chance to practice their newly acquired skills.

The second treatment group completed 75 minutes of training on identifying the emotion recognition cues associated with deception. The subjects learned about emotion recognition and previous research on this topic. Participants then used a software program, Micro Expression 3.0, to learn to recognize the small changes in facial expression associated with specific emotions. Micro expressions are defined as fleeting 40-200 millisecond expressions that "leak out" when a person tries to conceal his/her emotions. This software program is the standard for micro expression training in psychology research. After the training, participants in this group practiced identifying emotions being conveyed when facial expressions were flashed on a computer screen. The subjects in the control group spent 75 minutes engaged in word puzzles, personality quizzes, and viewing unrelated videos.

Each group completed pre- and post-tests that contained videos of people lying. The videos were coded using the Facial Action Coding System (FACS), which breaks facial expressions down into individual facial muscle movements to identify the micro expressions systematically. Soundtrack from the videos was transcribed and coded for valid spoken cues of deception.

The quantitative study results showed that the training had no significant impact on the ability of older adults to perceive deception in conversation. Although initial testing indicated that training produced improved scores, once the statistical tests controlled for the interaction between time (i.e., practice) and condition (training A, training B, or control), the scores did not show significant impact from training, only from time. There was some indication of the superiority of training on verbal over facial cues, but, it was also true that those in the control group improved in their recognition of deceit from baseline to post-test. This suggested that simply being exposed to lies and inaccuracies enabled older adults to practice and do a better job at the second testing, even without any training. The study concluded that older adults might do better using their first impressions to identify deception, an ability which earlier research has shown does not diminish with age.

To determine the qualitative results of the study, a theory and data-driven coding scheme was developed to track how participants responded to the question, "*What cues or strategies did you use to determine which statements were truths and which statements were lies*?" The coding scheme included several categories, including Hesitation, Facial Expressions, Eye Movements, Logical Response, Recall of Comments, Speech Characteristics, Nonverbal Behavior, Nervous Manner, Details/Context, Personal Beliefs, Liar's Use of Notes, and others.

Qualitative study results revealed that even though participants were told that targets were encouraged to use their notes when being interrogated about their beliefs, participants still considered referring to notes as an indicator of someone lying. Because of this, the researchers concluded that if the study were repeated, it would be better to remove the Liar's Use of Notes category.

The study also found that if the target's stated opinion on a controversial issue matched the participant's own opinion, the participant was more likely to judge the target as telling the truth. The researchers found this discovery interesting in light of recent socio-political accusations of "fake news" whereby news that is not consistent with one's own beliefs is deemed as untrue. This "way of knowing" was deemed outside of the scientific way of knowing. It was concluded that the Personal Beliefs cue indicates the participant was exhibiting a lack of Theory of Mind – the understanding that other people have different thoughts and experiences from your own. This conclusion was consistent with a meta-analysis that found that increasing age is associated with more difficulty with Theory of Mind. The results suggest that interrogating targets in a crime scenario rather than an opinion scenario might circumvent this issue in future studies. These results also suggest that it might be beneficial to include a critical reasoning component in future deception detection training.

Finally, participants appeared to change their use of cues according to the training they received. Participants in the emotion recognition group reported using facial expressions as a cue at post-test more frequently than participants in the control group. Similarly, participants in the spoken cues group reported using eye movements significantly less and restating views and details significantly more than the control group at post-test. Cue usage at post-test also positively correlated with deceit detection accuracy at post-test. Participants in the emotion recognition group who used the Nonverbal Behavior Cue were more accurate at detecting deceit. Participants in the control group who relied on agreement with their own personal beliefs as a cue were less accurate at detecting deceit. This suggested that Personal Beliefs Cue is not a valid cue to determine deception.

The researchers concluded that future work should involve a larger sample to have adequate power to probe these more complex relationships. In addition, the study did not look into the ability of older persons to detect online scams. Thus, it might be beneficial to expand the scope of future studies to include training on nonverbal and nonvisual cues in light of the threat of online scamming.

Note: *RRF staff takes much of the information for Grant Highlights directly from grantees' final reports. Staff often asks questions and holds discussions with grantees to get a more complete understanding of the results of grants and to understand challenges grantees faced.*