

# Empirically-Based Best Estimates of After-Death Communication (ADC) Phenomena: A Systematic Review of Research

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**ABSTRACT:** In after-death communication (ADC), a living person perceives the presence of a physically deceased person or animal. To date, estimates of ADC-related phenomena have been based on single studies or clinical observation. For this study, we conducted a systematic review of all quantitative descriptive studies of ADC we could find published through 2010. We found 35 studies, analyzed their methodological quality to rank them from best to worst, and used the methodologically strongest studies to arrive at best-estimates of ADC phenomena. For example, results indicated that, regarding prevalence, 30-35% of people report at least one ADC sometime in their lives and, regarding incidence, 70-80% of bereaved people report one or more ADC experiences within months of a loved one's physical death. We compiled these and other best-estimate results into a one-page fact sheet that healthcare providers, educators, and others can use to educate people who seek empirically-based information about ADC.

**KEYWORDS:** after-death communication, systematic review, prevalence, incidence, phenomenology

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To refer to a spontaneous phenomenon in which a living person has a feeling or sense of direct contact with a physically deceased person or animal—almost always with whom they had a personal relationship—authors have used various terms; see Table 1, far right column, “Terms used” (Streit-Horn, 2011). For the purpose of the study described in this article, despite somewhat common use of the term *hallucination*, we wanted to avoid possible and unwarranted association with psychopathology, so we decided to use what we consider a neutrally descriptive term first coined by Guggenheim and Guggenheim (1995): *after-death communication (ADC)*.

Researchers have found that ADC occurs across the ranges of culture, race, age, socio-economic status, educational level, sex, and religious beliefs, and experts in the fields of grief/bereavement, counseling, and parapsychology have supported the ideas that ADC is common and natural and that most experiencers (ADCrs) find ADC comforting, encouraging, and sometimes even life-saving (Arcangel, 2005; Devers, 1997; Guggenheim & Guggenheim, 1995; LaGrand, 1997, 1999, 2005; Long, 1999). Although mediumship also involves perceived communication with physically deceased people or animals, it is different from ADC: In ADC, the living person’s contact with the purported disembodied entity is direct with no intermediary, whereas in mediumship the contact between living person and disembodied entity is indirect, with the medium having the perceived direct contact and serving as an intermediary—literally, as a medium of communication—between the living person and the disembodied entity (Windbridge Research Center, 2017). Prior to the study described in this article, estimates regarding ADC phenomena, such as prevalence or incidence, have been based on clinical observation or isolated studies rather than on a comprehensive assessment of available research.

Published quantitative research on ADC phenomena has consisted so far of non-experimental descriptive studies. Whereas researchers seeking to synthesize findings from multiple experimental studies use meta-analysis, those seeking to synthesize findings from multiple non-experimental studies use systematic review (Petticrew & Roberts, 2006). According to Rubin (2008), “what makes a review systematic is the extent to which it attempts to be comprehensive in finding relevant studies and unbiased in appraising, synthesizing, and developing conclusions from the diverse studies with their disparate findings” (p. 161). Petticrew and Roberts (2006) noted that the “most common and probably the most serious flaw [in systematic reviews] is the lack of any systematic critical appraisal of the included studies” (p. 271).

We undertook a systematic review of published descriptive research studies on ADC that was designed to avoid this flaw in yielding empirically-based estimates of ADC phenomena. Our research questions addressed occurrence of ADC both in general and regarding various socioeconomic factors, benefits and/or detriments of ADC, mental health status of people who report ADC, and frequency of various types of ADC.

This study was first published in 2011 as the first author's PhD dissertation research (Streit-Horn, 2011). For a variety of reasons, it has not yet appeared in the peer-reviewed literature. Nevertheless, its publication now—a decade later—remains timely: It is based on all published studies of ADC through 2010—and since that time, although ADC research publications addressing various phenomenological aspects of ADC have recently proliferated (Elsaesser et al., 2021; Holden et al., 2019; Penberthy et al., 2021; Stemen, 2022), and two additional quantitative studies have addressed incidence of ADC phenomena among specialized populations—the suicide bereaved (Jahn & Spencer-Thomas, 2014) and the Australian Muslim bereaved (Ata, 2016)—no published study has addressed incidence in populations at large. Furthermore, since 2011, the professional literature contains only one “critical review of population and clinical studies” (Castellano et al., 2015); however, the authors considered only nine published studies—compared to our 35—and addressed methodological issues but, unlike us, did not consider the studies' relative methodological strengths and weaknesses when drawing conclusions. Thus, although we are unable to reconvene the original research team to include the few additional interim publications, the results of the original study described in this article remain unique and relevant to a current understanding of ADC and can serve as a foundation for anyone seeking a comprehensive background on the phenomenon through 2010.

## Method

### Phase 1: Comprehensive Literature Search

To identify relevant studies for the systematic review, we searched the PsycINFO and Academic Search Complete databases, using the term *after-death communication* as well as variations and synonyms for that term; we then used the References lists of those studies to maximize the likelihood that we were including all relevant studies. Additional studies came to our attention in other ways, such as from our existing knowledge base of the transpersonal literature and from browsing

in bookstores, in libraries, or online. In all, we found 34 quantitative descriptive studies published in English between 1894 and 2010 involving a total of 50,682 participants from 24 countries—with one of these studies involving two methodologically unique sub-studies that we divided into two studies for the purpose of analysis, yielding a total of 35 studies. For a summary of basic information about each study, see Table 1 in which the studies are listed alphabetically by first author's last name.

Upon initial examination, we found that the methodologies and results of these studies varied widely. For example, regarding prevalence—how many people report having experienced ADC sometime in their lives—results ranged from 2% (Sidgwick et al., 1894; West, 1948) to 88% (Sormanti & August, 1997); regarding incidence—how many people who have recently lost someone to death report ADC within a specified period of time following the death—results ranged from 49% (Barbato et al., 1999) to 90% (Yamamoto et al., 1969) within the first year following the death.

We found we needed to assess the methodological quality of the studies in order to identify the strongest studies to consider in making our estimate determinations. However, we failed to find specific methodology or instruments to enable us to conduct an unbiased analysis of methodological quality. Thus, we embarked on Phase 2 of the study.

**Table 1** *Summary of Quantitative Descriptive After-Death Communication Studies: 1894–2010*

Author(s) and Year	Type of Study	N	What was studied/Term used and Question asked
Arcangel, D. 2005	International survey made available online over 5-year period	827	Afterlife encounters “Have you experienced an encounter after the death of a loved one?”
Barbato, M. et al. 1999	Australia: Questionnaire sent to next of kin one month after their relative or friend had died in a palliative care unit in a hospital	47	Parapsychological experiences associated with the death of a loved one “Did the deceased report any unusual incident(s) before his/her death?” “Did you experience any unusual incident(s) prior to, at the time of, or following the death of your relative or friend?”
Burton, J. 1982	US (Los Angeles area): Questionnaire given to psychic research groups and classes	206	Contact with the dead “Have you ever had a ‘visitation’ from a deceased relative?”
Datson, S. & Marwit, S. 1997	US (St. Louis, MO): Surveys sent to recently bereaved recruited from grief support organizations, funeral home patron lists and advertisements in local publications	87	Perception of presence “In the time since the death of your loved one, have you ever felt a sense of their presence?”
Greeley, A. 1975	US national survey conducted by author and his colleagues at the University of Chicago’s National Opinion Research Council (NORC)	1,467	Contact with the dead “Have you ever felt that you were really in touch with someone who had died?”
Greeley, A. 1987	US national survey conducted by author and his colleagues at the University of Chicago’s National Opinion Research Council (NORC)	1473	Contact with the dead “Have you ever felt that you were really in touch with someone who had died?”

**Table 1** Summary of Quantitative Descriptive After-Death Communication Studies: 1894–2010 (continued)

Author(s) and Year	Type of Study	N	What was studied/Term used and Question asked
Grimby, A. 1993 and 1998	Goteborg, Sweden: Semi-structured interviews with widows and widowers. Participants were systematically selected (every second bereaved person born in 1912).	50	Postbereavement hallucinations and illusions “Have you ever felt that your husband/wife has been with you in some way since he/she died?”
Guggenheim, B. & Guggenheim, J. 1995	US and Canada: ADC Research Project took 7 years to complete and consisted of telephone interviews with Americans and Canadians who responded to flyers and/or word of mouth. Participant recruitment originated in the Orlando, FL area.	2,000	After-death communication (term coined in this book) “Have you been contacted by someone who has died?”
Haraldsson, E. et al. 1977	Iceland: National random sample questionnaire	902	Apparitions of the dead (under the heading of “psychic experiences”) Exact question unclear; author made reference to the Palmer study (1979).
Hobson, C. 1964	England: Unstructured interviews with widows in small town	40	Sense of presence Unclear as to whether participants were asked specifically about this experience.
Houck, J. 2005	US (Pennsylvania): Survey given to bereaved people recruited from various hospice, suicide support groups, and HIV/AIDS agencies	162	After-death communication “After the death of your loved one, was there every a time when you sensed his/her presence?”
Kalish, R. & Reynolds, D. 1973	US (Greater Los Angeles): Interviews with people from 4 ethnic groups (Black, White, Japanese, and Mexican) Random sample	34	Post-death contact “Have you ever experienced or felt the presence of anyone after he died?”
Kelly, R. 2002	US: Questionnaires and interviews with emergency service workers	90	Post mortem contact with fatal injury victims “Have you ever felt a ‘presence,’ ‘communication’ of some kind, or a feeling of ‘attachment’ from a deceased victim?”

Author(s) and Year	Type of Study	N	What was studied/Term used and Question asked
Klugman, C. 2006	US (Reno, Nevada): Closed ended random digit-dial telephone survey at U of Nevada, Reno	202	Post Death Contact (PDC) “Do you have a connection with someone who has died?”
Kohr, R. 1980	US: Non-randomized survey of members of the Association for Research and Enlightenment (A.R.E.)	406	Spontaneous psi experiences Apparitions: “Have you ever had, <i>while awake</i> , a vivid impression of seeing, hearing, or being touched by another being, which impression, as far as you could discover, was not due to any external physical or ‘natural’ cause?” Communication with the dead: “Have you ever ‘communicated’ with the dead or believed yourself to have been controlled or ‘possessed’ by a ‘spirit’?”
Lindstrom, T. 1995	Norway: Interviews of widows recruited through hospital(s)	39	Sense of presence of the deceased spouse “Have you ever sensed the presence of your deceased spouse?”
Luke, D. & Kittenis, M. 2005	UK: online questionnaire inquiring about psychoactive drug-use behavior and the frequency of occurrence of a number of paranormal, shamanic, and mystical type experiences	139	Transpersonal (paranormal, shamanic, and mystical type) experiences “While not dreaming, and without any normal explanation, I have had the experience of communication with a deceased person or spirit.”
MacDonald, W. 1992	US: Used data from 1989 General Social Survey (GSS) conducted for the National Data Program for the Social Sciences at the National Opinion Research Center (NORC)	465	Idionecraphany: a sensory experience which involves contact with a dead person “Have you thought you were really in touch with someone who had died?”
Mack, J. & Powell, L. 2005	US (Jefferson County, Alabama): Random sample telephone survey (cluster sampling procedure for stratified random samples)	368	Post-death communication “Have you ever felt that you’ve had a message from a deceased friend or family member?”

**Table 1** Summary of Quantitative Descriptive After-Death Communication Studies: 1894–2010 (continued)

Author(s) and Year	Type of Study	N	What was studied/Term used and Question asked
Marris, P. 1958	UK: Interviews with widows	72	Sense of dead husband's presence Unclear as to whether participants were asked specifically about this experience.
McClenon, J. 1988	People's Republic of China: Random sample survey of dormitory residents at 3 colleges in Xi'an	314	Communication with the dead "Have you thought you were really in touch with someone who had died?"
Olson, P. et al. 1985	US (Asheville, North Carolina): Interviews with widowed residents of 2 nursing homes (non-random selection)	52	Hallucinations of widowhood "Have you ever experienced your husband/wife being with you in any way since his/her death?"
Osis, K. & Haraldsson, E. 1977 India	India: Survey of doctors and nurses reporting on their patients' deathbed visions In India, recruited hospital staff from large university hospitals	435	Deathbed visions, hallucinations, apparitions of dead persons "What was the patient's behavior indicating that he/she was experiencing hallucinations?"
Osis, K. & Haraldsson, E. 1977 United States	US: Survey of doctors and nurses reporting on their patients' deathbed visions In the US, stratified random sample	442	Deathbed visions, hallucinations, apparitions of dead persons "What was the patient's behavior indicating that he/she was experiencing hallucinations?"
Palmer, J. 1979	US (Charlottesville, Virginia): Randomly selected sample of students from U of Virginia and adult residents	354 (towns-people)  268 (students)	Apparitions: "Have you ever had, <i>while awake</i> , a vivid impression of seeing, hearing, or being touched by another being, which impression, as far as you could discover, was not due to any external physical or 'natural' cause?" Communication with the dead: "Have you ever 'communicated' with the dead or believed yourself to have been controlled or 'possessed' by a 'spirit'?"



Author(s) and Year	Type of Study	N	What was studied/Term used and Question asked
Parkes, C. 1965	London, England: Interviews with selected bereaved psychiatric patients in 2 hospitals  Interview with open-ended questions	21	Sense of presence, illusions, hallucinations  Unclear as to whether participants were asked specifically about this experience.
Parkes, C. 1970	London, England: Standardized interviews with widows	22	Sense of presence, illusions, hallucinations  Unclear as to whether participants were asked specifically about this experience.
Rees, W. 1971	Wales: Interviews with widowed residents in mid-Wales	293	Hallucinations, illusions of dead spouse  Participants were not directly asked about hallucinatory experiences.
Sidgwick, H. et al. 1894	UK (primarily): Census carried out over the course of 3 years by the Society for Psychical Research (SPR). Many collectors/interviewers were associated with SPR.	17,000	Spontaneous hallucinations of the sane  "Have you ever, when believing yourself to be completely awake, had a vivid impression of seeing or being touched by a living being or inanimate object, or of hearing a voice: which impression, so far as you could discover, was not due to any external physical cause?"
Silverman, P. & Nickman, S. 1996	US (Massachusetts General Hospital/Harvard Medical School Child Bereavement Study) Used data from longitudinal, prospective study: interviews with bereaved children; use of open-ended questions	125	Experiencing the deceased  Participants were not directly asked if they experienced the deceased.
Simon-Buller, S. et al. 1988	US (Arizona): Questionnaires mailed to widows in Arizona; widows were recruited via the American Association of University Women, organizations for widows, some newspaper ads, and personal referrals (not random)	294	Sense of presence of the deceased spouse  "Do you ever sense the presence of your deceased spouse?"

**Table 1** Summary of Quantitative Descriptive After-Death Communication Studies: 1894–2010 (continued)

Author(s) and Year	Type of Study	N	What was studied/Term used and Question asked
Sormanti, M. & August, J. 1997	US (New York, New York): Mailed surveys to bereaved parents of pediatric cancer patients at a hospital; 9 open-ended questions	43	After-death connection “Please describe ways in which you continue to feel connected to your child after she/he has died.”
West, D. 1948	US: Mailed survey conducted by the Society for Psychological Research (SPR) with assistance from “Mass-Observation,” which provided a national panel of voluntary helpers who assisted by answering and getting their friends to answer the questionnaire sent to them in the mail	1,519	Hallucinations of dead persons “Have you ever, when believing yourself to be completely awake, had a vivid impression of seeing or being touched by a living being or inanimate object, or of hearing a voice: which impression, so far as you could discover, was not due to any external physical cause?”
World Value Survey 1981-1984 Reported by Haraldsson, E. in 1985 and Haraldsson, E. & Houtkooper, J. in 1991	International: Multinational Human Values Study conducted by Gallup International involving leading polling institutions in most Western European countries and some countries in Asia	20,133	Contact with the dead “Have you ever felt as though you were really in touch with someone who had died?”
Yamamoto, J. et al. 1969	Tokyo, Japan: Interviews with widows; researchers sent widows of men killed in automobile accidents letters requesting their participation in the study.	20	Sense of presence of deceased Unclear as to whether participants were asked specifically about this experience.

## Phase 2: Analysis of Methodological Quality of the 35 Studies

To assess methodological quality of the studies, we followed published guidelines for development and application of a rubric (Gall et al., 2003; Petticrew & Roberts, 2006; Rubin, 2008; The Teaching, Learning, and Technology Group, 2008; University of West Florida Center for University Teaching, Learning, and Assessment, 2008). Steps included initial draft based on published literature, including performance elements, scale, and descriptors; and consultation with experts resulting in a second draft that included weighting of the performance elements determined by consensus of the raters and experts. The result was 11 weighted items (see Table 2) with a possible rating of strong (3), moderate (2), or weak (1) for each item, yielding a total possible score ranging from 17.25 to 51.75.

We trained three raters, doctoral students in a counselor education program at a large southwestern university, to apply the rubric to the studies. The process included three phases: pilot, training, and rating. In the rating phase, including initial rating and consultation to address rating discrepancies, the raters ultimately achieved inter-rater reliability of Pearson's  $r = .90$ , considered acceptable (Frick & Semmel, 1978; LeBreton & Senter, 2008). The result was the 35 studies ranked by methodological quality from weakest at a score of 23.25 (Hobson, 1964) to strongest at a score of 41.25 (Palmer, 1979), with mean 31.51; see Table 3. Because not all studies addressed all of our research questions, we embarked on Phase 3.

**Table 2** *Weighted Items of Research Evaluation Rubric*

Item	Description	Weight
1	Purpose of study: clarity/completeness of explanation	1.5
2	Method: clarity/completeness of description	1.75
3	Instrument reliability—Cronbach's alpha	2
4	Instrument validity	2
5	Sample: representativeness	1.5
6	Sample: sampling method	1.5
7	Sample: size	1.5
8	Bias / limitations	1.5
9	Response rate	1.5
10	Difference between respondents and non-respondents: attempt to explain	1
11	Results/conclusions/discussion	1.5

**Table 3** *Quantitative Descriptive After-Death Communication Studies Ranked by Methodological Quality*

<b>Rubric Items: 3 = Strong, 2 = Moderate, 1 = Weak or Unknown</b>					
Study Number	Author(s) and Year / Weighting	1	2	3	4
		PURP 1.5	METH 1.75	RELI 2	VALI 2
1	Palmer, 1979	3	3	1	1
2	Kalish & Reynolds, 1973	3	3	1	2
3	Greeley, 1975	3	3	1	1
4	Kohr, 1980	2	3	3	1
5	Mack & Powell, 2005	3	3	3	1
6	Haraldsson et al., 1977	2	2	1	1
7	Marris, 1958	3	3	1	1
8	Osis & Haraldsson, 1977--US	3	3	1	1
9	Grimby, 1993 and 1998	3	3	1	1
10	MacDonald, 1992	3	3	1	1
11	World Value Survey 1981-1984	2	2	1	1
12	Greeley, 1987	2	3	1	1
13	Houck, 2005	3	3	1	1
14	Luke & Kittenis, 2005	3	3	1	1
15	McClenon, 1988	3	3	1	1
16	Sidgwick et al., 1894	2	3	1	1
17	Kelly, 2002	3	2	1	2
18	Klugman, 2006	2	3	1	1
19	Osis & Haraldsson, 1977--India	3	3	1	1
20	Parkes, 1970	2	3	2	1
21	Arcangel, 2005	3	2	1	1
22	Olson et al., 1985	3	3	1	1
23	Silverman & Nickman, 1996	3	3	1	1
24	Sormanti & August, 1997	3	3	1	1
25	Simon-Buller et al., 1988	3	2	1	1
26	Rees, 1971	2	2	1	1
27	Barbato et al., 1999	3	2	1	1
28	Datson & Marwit, 1997	3	2	1	1
29	West, 1948	3	2	1	1
30	Guggenheim & Guggenheim, 1995	2	1	1	1
31	Yamamoto et al., 1969	2	2	1	1
32	Burton, 1982	2	2	1	1
33	Lindstrom, 1995	3	2	1	1
34	Parkes, 1965	2	2	1	1
35	Hobson, 1964	2	1	1	1

*Note.* The number underneath each rubric item abbreviation is the weight of each given item in relation to the other items.

Rubric Items: 3 = Strong, 2 = Moderate, 1 = Weak or Unknown							
5 REPR 1.5	6 SAMP 1.5	7 SIZE 1.5	8 BIAS 1.5	9 RESP 1.5	10 DIFF 1	11 CONC 1.5	Weighted Score
2	3	3	3	3	2	3	41.25
3	3	2	3	2	1	3	40.75
3	3	3	3	1	1	3	38.75
2	1	2	2	3	1	3	36.75
1	3	2	2	1	1	3	36.75
3	3	3	2	3	2	2	36.50
1	2	1	3	3	3	3	36.25
2	3	2	3	1	1	3	35.75
1	3	1	2	3	1	3	34.25
3	3	2	2	1	1	2	34.25
3	3	3	2	1	1	3	34.00
3	3	3	1	1	1	2	32.75
1	1	2	3	2	1	3	32.75
2	1	2	3	1	1	3	32.75
1	3	2	2	2	1	2	32.75
3	1	3	2	1	1	3	32.75
1	1	1	3	2	1	3	31.50
1	3	2	2	1	1	3	31.25
1	1	2	3	1	1	3	31.25
1	1	1	1	3	2	3	31.25
3	1	3	1	1	1	3	31.00
1	1	1	3	2	2	2	30.75
2	1	2	1	1	1	3	29.75
1	1	1	3	1	1	3	29.75
1	1	2	2	2	1	3	29.50
1	1	2	2	3	2	2	29.00
1	1	1	2	2	1	3	28.00
1	1	1	1	3	1	3	28.00
1	1	3	2	1	1	2	28.00
2	1	3	1	1	1	3	26.25
1	1	1	2	1	1	3	25.00
1	1	2	1	1	1	2	23.50
1	1	1	1	1	1	2	23.50
1	1	1	1	2	1	2	23.50
1	1	1	1	3	1	2	23.25

### **Phase 3: Use of the Ranked Studies**

For each study, we indicated which of our research questions it addressed. Then we proceeded to use the methodologically strongest studies to arrive at answers to the research questions. We considered that results from the five strongest studies addressing a particular research question would be adequate to answer the question.

For research questions that involved percentages, we did not want simply to use a mean of the findings from the five studies. Rather, following Zingrone and Alvarado (2009) who used published studies of near-death experiences to establish prevalence and incidence for those phenomena, we began with the mean percentage from our five studies and then considered additional factors to arrive at best estimates for ADC phenomena.

## **Results**

In this section we provide detailed data to show how we arrived at overall prevalence and incidence estimates. For the remaining research subquestions and subsequent questions, we provide only the percentage results from each of the five methodologically strongest relevant studies.

### **Prevalence and Incidence**

Research Question 1: How common are experiences of ADC, and how does occurrence vary by sex, age, marital status, ethnicity, religious practice, religious affiliation, financial status, physical health, educational level, and grief status?

Table 4 shows the five methodologically strongest studies that addressed prevalence—frequency of reported ADC in the general population—and their results. In the cases of Palmer (1979) and Kohr (1980), the researchers reported two different results: one for “apparitions” and another for “communication with the dead.” In both cases, researchers’ definitions and discussions revealed that the data gathered for apparitions were more closely related to ADC. They indicated that communication with the dead was meant to assess mediumistic-type experiences, that is, the kind of third-party experiences involving a medium that we had explicitly excluded from our study selection criteria. Thus, in both cases, we used the apparition data in our calculations.

The mean percentage of the five results was 34%. Given that the strongest study yielded a percentage quite a bit lower than 34% and the second strongest study yielded a percentage a bit higher than 34%, we concluded that an estimated 30-35% of people, or approximately one out of three people in the general population, are likely to report having experienced ADC at least once during the course of their lifetimes.

Table 5 shows the five methodologically strongest ADC studies that addressed incidence—frequency of reported ADC with someone within a specified period of time following their physical death—and their results. The mean percentage of the five results was 75%. Because the three strongest studies yielded percentages that were relatively similar to each other, we concluded that an estimated 70-80% of bereaved people, or approximately three out of four, are likely to report one or more ADC experiences within a year of the death of a loved one whom they are grieving.

Of the five methodologically strongest ADC studies in which researchers reported results on ADCr participants' sex, Kalish and Reynolds (1973), Mack and Powell (2005), and Haraldsson et al., (1977, US) found ADC prevalence to be significantly higher in women; Greeley (1975) reported greater frequency in women than men without analyzing for statistical significance of the difference; and Osis and Haraldsson (1977, US) found no difference between men and women, with prevalence being 50% for each. Thus, we concluded that both females and males report ADC and that females report it more than males do.

Regarding age, of the five methodologically strongest ADC studies in which researchers reported results on ADCr participants' ages, three—Kalish and Reynolds (1973), Kohr (1980), and MacDonald (1992)—yielded no statistically significant difference in reported occurrence of ADC, two—Greeley (1975) and Grimby (1993, 1998)—yielded a statistically non-significant tendency for older people to report more ADC, and one of those two—Greeley (1975)—also yielded a statistically non-significant tendency for teens to report more ADC. Thus, we concluded that people of all ages report ADC, with possibly somewhat more reports among the elderly.

Regarding marital status, of the five methodologically strongest studies in which researchers reported results on this variable, three found those widowed to be more likely to report ADC: Palmer's (1979) study yielded statistically significant results, whereas Greeley (1975) and World Value Survey (1981-1984) reported frequency only. Kohr (1980) found more—but not significantly more—frequent reports

**Table 4** *Prevalence of After-Death Communication*

<b>Author(s) and Year</b>	<b>Prevalence</b>	<b>Type of Study and N/n</b>	<b>What was studied/Term used and Question asked</b>
Palmer 1979	17% (apparitions) * 5% (communication with the dead)	US (Charlottesville, VA): Randomly selected sample of students from University of VA and adult residents <i>n</i> = 354 (townspeople) <i>n</i> = 268 (students)	Apparitions: "Have you ever had, while awake, a vivid impression of seeing, hearing, or being touched by another being, which impression, as far as you could discover, was not due to any external physical or 'natural' cause?" Communication with the dead: "Have you ever 'communicated' with the dead or believed yourself to have been controlled or 'possessed' by a 'spirit'?"
Kalish & Reynolds 1973	44%	US (Greater Los Angeles): Interviews with people from 4 ethnic groups (Black, White, Japanese, and Mexican) Random sample <i>N</i> = 434	Post-death contact "Have you ever experienced or felt the presence of anyone after he died?"
Greeley 1975	27%	USA national survey conducted by author and his colleagues at the University of Chicago's National Opinion Research Council (NORC) <i>N</i> = 1,467	Contact with the dead "Have you ever felt that you were really in touch with someone who had died?"
Kohr 1980	54% (apparitions) * 25% (communication with the dead)	US: Non-randomized survey of members of the Association for Research and Enlightenment (A.R.E.) <i>N</i> = 406	Spontaneous psi experiences Apparitions: "Have you ever had, while awake, a vivid impression of seeing, hearing, or being touched by another being, which impression, as far as you could discover, was not due to any external physical or 'natural' cause?" Communication with the dead: "Have you ever 'communicated' with the dead or believed yourself to have been controlled or 'possessed' by a 'spirit'?"
Mack & Powell 2005	29%	US (Jefferson County, AL): Random sample telephone survey (cluster sampling procedure for stratified random samples) <i>N</i> = 368	Post-death communication "Have you ever felt that you've had a message from a deceased friend or family member?"

*Note:* Studies are listed in descending order according to methodological quality with the strongest study listed first.  
\* Based on the researchers' descriptions of "apparitions" and "communication with the dead," more emphasis should be placed on "apparitions" because of more similarity in that description and the ADC definition. It is possible that "communication with the dead" captures ADC experiences. Because some participants could have answered "yes" to both, we did not combine the two percentages for fear of getting an inaccurately inflated percentage.



**Table 5** *Incidence of After-Death Communication*

Author(s) and Year	Incidence	Type of Study and N	What was studied/Term used and Question asked
Grimby 1993 and 1998	82% at 1 mo. 71% at 3 mos. 52% at 12 mos.	Goteborg, Sweden: Semi-structured interviews with widows and widowers. Participants were systematically selected (every second bereaved person born in 1912). N = 50	Post-bereavement hallucinations and illusions “Have you ever felt that your husband/wife has been with you in some way since he/she died?”
Parkes 1970	73% at 1 mo. 55% at 12 mos.	London, England: Standardized interviews with widows N = 22	Sense of presence, illusions, hallucinations Unclear as to whether participants were asked specifically about this experience
Silverman & Nickman 1996	81%	US (MA General Hospital/ Harvard Medical School Child Bereavement Study) Used data from longitudinal, prospective study: interviews with bereaved children; use of open-ended questions N = 125	Experiencing the deceased Participants were not directly asked if they experienced the deceased.
Barbato et al. 1999	49%	Australia: Questionnaire sent to next of kin one month after their relative or friend had died in a palliative care unit in a hospital N = 47	Parapsychological experiences associated with the death of a loved one “Did the deceased report any unusual incident(s) before his/her death?” “Did you experience any unusual incident(s) prior to, at the time of, or following the death of your relative or friend?”
Yamamoto et al. 1969	90%	Tokyo, Japan: Interviews with widows; researchers sent widows of men killed in automobile accidents letters requesting their participation in the study. N = 20	Sense of presence of deceased Unclear as to whether participants were asked specifically about this experience

*Note.* Studies are listed in descending order according to methodological quality with the strongest study listed first.

among married participants, and Grimby (1993, 1998) found a significant positive relationship between “former marital harmony with a deceased partner” and ADC, but no significant relationship between length of marriage and ADC. Thus, we concluded that individuals of all marital statuses report ADC, with a tendency for widowed individuals—perhaps especially those who reportedly were happily married—to be more likely to report ADC than those who were not happily married. Because widowed marital status also relates to grief status, we address the topic of marital status further in the discussion below of ADC and grief status.

Regarding ethnicity, only five studies yielded data on this variable in relation to ADC; all were among the top 10 studies in terms of overall methodological quality, and all reported prevalence. Although Kohr (1980) found no significant difference, three of the remaining four found a difference. Kalish and Reynolds (1973), Mack and Powell (2005), and MacDonald (1992) found that African Americans reported ADC significantly more frequently than Caucasians, and Greeley (1975) noted the same trend but through only the reporting of frequencies without analysis for statistical significance. Furthermore, MacDonald (1992) found that participants from both groups who reportedly viewed God as loving reported significantly more ADC than those who viewed God as punishing. The one study—Kalish and Reynolds (1973)—in which researchers reported ethnicity beyond those two groups, they reported prevalence, from highest to lowest, among African Americans, Mexican Americans, Caucasians, and Japanese Americans. Thus, we concluded that people of multiple ethnicities report ADC, with a somewhat greater prevalence among African Americans than Caucasians.

Regarding religious practice, of the five methodologically strongest ADC studies in which researchers reported results on ADCr participants’ religious practice, four—Palmer (1979), Kohr (1980), World Value Survey (1981-1984), and Grimby (1993, 1998)—found no significant difference in religious practice among ADCr participants, and one—Greeley (1975), who reported frequency but not statistical significance—found more ADC reports among people who identified themselves as conventionally religious. Thus, we concluded that people of all religious practices report ADC without a strong indication of difference related to variations in practice.

Regarding religious affiliation, eight studies yielded data. Of the five methodologically strongest studies, one—Kohr (1980)—yielded no statistically significant difference, and two—Osis and Haraldsson (1977,

US) and Houck (2005), both reporting frequency only—also yielded no difference in frequency of ADC reports among participants of various religious affiliations; one—MacDonald (1992)—yielded a statistically non-significant tendency for people who identified themselves as religiously moderate or liberal to report more ADC; and one—Palmer (1979)—yielded a significantly greater number of ADC reports among those who identified themselves as “other,” which the researcher proposed most likely represented Eastern faiths. Thus, we concluded that people of various religious affiliations report ADC, possibly with somewhat more reports among those identifying their affiliation as religiously moderate or liberal or “other” than Protestant, Catholic, Jewish, or Atheist.

Regarding physical health, only three studies—Osis and Haraldsson (1977, US), Osis and Haraldsson (1977, India), and Simon-Buller et al. (1988)—assessed this variable. All three studies yielded prevalence data and represented a range of methodological quality ranked from 8th to 25th. Of these three researchers/research groups, none found a significant difference in relation to physical health. Thus, we concluded that participants of a variety of states of physical health report ADC.

Regarding financial status, eight studies reported data on ADCr participants' income levels. Of the five methodologically strongest studies, Kohr (1980) and Osis and Haraldsson (1977, US) found no significant relationship between participants' income levels and frequency of ADC reports, and Houck (2005) also reported no difference based on reported frequencies without analysis for significant difference. Conversely, Mack and Powell (2005) found a statistically significant tendency for low- and middle-income participants to report more ADC, and Greeley (1975), who reported only frequencies without analysis for statistical significance, observed a higher frequency of ADC reports among low income participants. Thus, we concluded that people of all income levels report ADC, possibly with somewhat more reports among individuals of low- and middle- income levels.

Regarding educational level, 11 studies reported results on ADCr participants' education level. Of the five methodologically strongest studies, Palmer (1979) and Kalish and Reynolds (1973) reported a statistically significant negative correlation whereby ADC reports increased as education level decreased, and Greeley (1975) observed the same pattern from frequencies without analysis for statistical significance. However, Kohr (1980) and Osis and Haraldsson (1977, US) found no significant relationship between ADC report frequencies and

educational level. From these mixed results, we concluded that people of all education levels report ADC, perhaps with prevalence decreasing somewhat as education level increases.

Regarding grief status, only Arcangel (2005) specifically differentiated between grieving and non-grieving participants; from reported frequencies without analysis for statistical significance, she found more reports of ADC among the grieving. As discussed above, all of the studies yielding incidence data involved bereaved participants, and among not only the five methodologically strongest studies but all studies, incidence of ADC among the bereaved was consistently higher than prevalence of ADC in the general population. Thus, we concluded that both grieving and non-grieving participants report ADC, with substantially more reports among the bereaved.

Nationality was not part of our original research question, but we noted that researchers who conducted the World Value Survey (1981-1984) observed through frequency reports without analysis for statistical significance that ADC prevalence differed among participants of different nationalities. For example, Icelanders showed higher prevalence of ADC than Norwegians and Danes.

## **Benefits or Detriments**

Research Question 2: To what extent do ADCrs report ADC experiences to be beneficial and/or detrimental, and what are the leading benefits and/or detriments?

Of the 35 ADC studies, 19 yielded data on the benefits of ADC. Among these studies, percipients described ADC to be one or more of the following: pleasant, positive, mystical, serene, elating, helpful, comforting, healing, spiritual, and a good experience. Twelve of the 35 ADC studies addressed detrimental effects of ADC. Most reported were experiences of fear and confusion—nearly always not because the content of the experience itself was distressing but because the ADCrs were not prepared to expect or understand such experiences. Of the five methodologically strongest ADC studies in which researchers reported results on the benefits and/or detriments of ADC, three—Kalish and Reynolds (1973), Osis and Haraldsson (1977, US), and Grimby (1993, 1998)—reported both pleasurable and distressing percipient responses to ADC, with a substantial majority of respondents reporting pleasurable experiences and a minority of respondents reporting distressing experiences. In two studies—MacDonald (1992) and Greeley (1987)—researchers reported only pleasurable percipient responses. In one

study, Kalish and Reynolds (1973) reported statistical significance and found that Caucasians and women over age 60 were more likely to find the experience rewarding than were African Americans, Japanese, Mexican Americans, or women under the age of 60. Mexican Americans and women aged 20 to 39 were more likely to report a dislike for the encounter. Thus, we concluded that the great majority of people who report ADC describe the experience as pleasurable, perhaps with Caucasians and women over age 60 more likely to report pleasurable experiences; whereas only a minority of ADCrs report distressing experiences, perhaps with Mexican Americans and women between the ages of 20 and 39 more likely to report distressing experiences.

### **Mental Health Status**

Research Question 3: What is the mental health status of ADCrs?

None of the ADC studies involved specific assessment of ADCrs' mental health. However, several authors commented on their informal observations of their participants' mental health. In 15 of the 35 ADC studies, researchers reported that all participants seemed mentally healthy. Three researchers reported some participants who seemed mentally unhealthy. For example, Rees (1971) reported that some ADCrs were depressed but noted that the incidence of depression was similar for those who reported ADC and for those who did not. Hospitalized psychiatric patients comprised the participants in Parkes's (1965) study—and he found ADC incidence that was comparable to incidence in general populations. Only Hobson (1964) noted that some ADCr participants had a loss of contact with reality. Of the five methodologically strongest ADC studies in which researchers mentioned mental health status of ADCrs, all five—Palmer (1979), Kalish and Reynolds (1973), Greeley (1975), Osis and Haraldsson (1977, US), and Grimby (1993, 1998)—reported that participants seemed mentally healthy. Thus, we concluded that ADC occurs in people of all mental health statuses and that the experience itself is not an indication of mental disorder.

### **Sensory Modalities**

Research Question 4: What is the frequency of various types of ADC?

A composite summary of the 35 ADC studies indicates that ADC may occur as any of a number of types—alone or in combination with others. ADCr circumstances included awake and asleep (“dream ADC”); healthy, ill, or on one's deathbed; and with and without elec-

tronic equipment such as “telephone ADC.” ADCrS reported experiencing the physically deceased directly through visual, auditory, tactile, and/or olfactory modalities or as a sensorily-nonspecific distinct sense of presence. ADCrS also experienced the deceased indirectly through symbolic ADC such as synchronistic occurrence of music on the radio or appearance of animals such as butterflies or dragonflies.

About half of the 35 ADC studies yielded data regarding types of ADC. The top five studies that yielded data on types of ADC are listed as follows in order of methodological quality (strongest first): Kalish and Reynolds (1973), Haraldsson et al. (1977), Grimby (1993, 1998), Greeley (1987), and Houck (2005). Regarding circumstances, Kalish and Reynolds (1973) and Houck (2005) reported sleep ADC as the most common type. Regarding sensory modality, Haraldsson et al. (1977) and Greeley (1987) identified visual as the most common type of ADC, whereas Grimby (1993, 1998) found sense of presence to be most common. Thus, we concluded that ADC may occur as any type and any combination of types, with sleep ADC, visual ADC, and sense of presence possibly occurring more commonly.

## Discussion

### Prevalence and Incidence

ADC belongs to the broad category of transpersonal experiences—those that transcend experiencers’ usual personal limits of space, time, identity, and/or influence (Fall et al., 2023, p. 475). Regarding inclusivity, ADC is an “equal opportunity” transpersonal experience, in that, for every demographic investigated among the 35 studies, participants representing that demographic reported ADC. Beyond this basic fact, some differences in frequencies among people of various demographics did emerge from our systematic review of the ADC literature.

Given the results on prevalence, it appears that roughly a third of people report at least one ADC experience during the course of their lifetimes. Interestingly, the top five studies reporting prevalence were conducted in the US. It may be more accurate to say that about a third of *Americans* likely will report at least one ADC in their lifetimes; however, given the systematic appraisal of the 35 ADC studies, it seems reasonable to conclude that this estimate could apply to the general population—with the caveat that it likely will vary with nationality.

In fact, Haraldsson and Houtkooper (1991) noted that nationality emerged as a “very powerful factor indeed” (p. 159) in the occurrence of psychic experiences of which ADC was one type. They cited many

possible reasons for this finding: differences in genetics, dominant philosophy or life styles, degree of media coverage related to ADC, and impact of the quantity and quality of research conducted and published in a given nation. Yamamoto et al. (1969) noted openness to maintaining a connection with the deceased in Japan in general and Tokyo in particular; this attitude may have contributed to a high prevalence of 90% they found in their study. These findings are consistent with research in which participants from cultures that accept paranormal experiences as normal and healthy report more such experiences (Matchett, 1972). Nevertheless, more research is needed to determine differences due to nationality. The World Values Study (1981-1984) unfortunately discontinued in subsequent studies the question related to ADC (Haraldsson & Houtkooper, 1991). A suggestion for future research is another multi-national study in which researchers study ADC with regard to participants' nationalities.

All of the studies yielding incidence included recently bereaved participants, so the results regarding incidence apply only to that population. In addition to our estimate that at least three-fourths of bereaved people report at least one ADC experience in the first year following the death of the loved one, we noted a further consistent pattern from the three studies in which the researchers sampled their participants repeatedly over the course of one year following the death. In all three studies (Grimby, 1993, 1998; Parkes, 1970; Lindstrom, 1995), the percentage of incidence decreased with passing time. The researchers did not ask if participants had experienced ADC *since* the last interview; they simply asked their *same* respective interview questions again at each assessment point. Some participants who had said at the first data collection point that they had experienced ADC did not report at later points that they had experienced them. It appears they forgot or subsequently discounted some previous experiences.

Researchers did not speculate extensively on the possible reason(s) why some people's memories of their ADC experiences may degrade over time. The finding must remain for now a matter of speculation. Given the beneficial nature of ADC for the majority of percipients, one might conclude that ADCrs may not remember their experiences because of having integrated them into their lives and moved forward psychologically. Another possibility is that, at least among Western participants, they repressed their memories of their transrational experiences that contradicted the prevailing rationalist, reductionist views of modern Western culture. Whatever the reason, one conclusion seems justified: Although cases of ADC exist involving a loved one



long deceased, ADCrs are more likely to recall ADC experiences—and report them, including in healthcare settings—within a relatively shorter time, such as months, than longer time, such as even a year, after the death of a loved one. Thus, it is probably most accurate to say that within a few months of the death of a loved one, about three-fourths of bereaved people will report an ADC, whereas after a year, the proportion drops to about a half.

The phenomenon of degrading ADC memories may help explain the consistent finding across the 35 studies of greater ADC incidence than prevalence. In their analysis of research on near-death experiences (NDEs), Zingrone and Alvarado (2009) cited Greyson (1998), a well-known expert in the field of near-death studies, as saying “prevalence will necessarily be greater . . . than incidence” (p. 98). In the case of NDEs, this conclusion seems logical; near-death experiencers’ (NDErs’) memories of their NDEs show extremely little degradation over time but, rather, persist and “accumulate”; hence, retrospective studies of NDEs are likely to yield higher percentages of people who recall an NDE from sometime in their lives—about 35% according to Zingrone and Alvarado (2009)—than prospective incidence studies of, say, people resuscitated in hospital over the course of a year—about 17% according to Zingrone and Alvarado (2009). Thus, among NDErs, incidence of NDEs among the recently resuscitated is understandably lower than prevalence among the general population.

However, in the case of ADC, incidence among the recently bereaved has been consistently higher than prevalence among the general population. Returning to those three studies with repeated sampling of the same participants, if the participants had been asked about their ADC experiences *only* after one year following the death, the approximately 50% reporting such experiences would have more closely resembled the prevalence figure of about 35% than the one-month-after-death incidence figure of about 75%. Thus, the 35% prevalence figure may actually be a substantial underestimate. It presents an interesting epistemological problem to contemplate whether, “If an ADCr forgets an ADC, did/does the ADC actually exist?”

In any case, a critical variable in the occurrence of ADC seems to be grief status. Though non-grieving people report ADC, grieving people report them more. Furthermore, with three-fourths of people reporting ADC within a month of a death of a loved one, it becomes axiomatic that ADC is a normal part of the grieving process (Arcangel, 2005; Devers, 1997; Drewry, 2003; Guggenheim & Guggenheim, 1995; LaGrand, 1999, 2005; Rando, 1984, 1988; Shuchter & Zisook, 1988; Wor-



den, 2018). However, it is important for healthcare providers not to be surprised by ADC reports among non-grieving clientele.

Why females report more ADC than males is uncertain, and discussion of this finding is scarce in the literature. Greeley (1975) noted a strong relationship between being a woman and having psychic experiences in general. MacDonald (1992) reported the possibility that women are more likely than men to have “realities which allow for such attributions. Males are socialized to repress intuitive thoughts, which might make them less apt to report [ADC experiences] if they do have them” (p. 221). Rather than the psychogenic explanation of repression is the physiological explanation related to the corpus callosum. Though controversial, the weight of evidence appears to support that this structure, which is responsible for communication between the two hemispheres of the brain, is larger in females than males (Johnson et al., 1996). Perhaps communication between the hemispheres, perhaps particularly “input” from the more non-linear right hemisphere, is necessary for, or at least facilitative of, transpersonal experiences such as ADC. Possible causes for this difference between the sexes is ripe for research.

Regarding age, the finding in two studies of a slight tendency for older people to report more ADC could be a result of older people simply experiencing more recent and/or more cumulative losses of friends and family members to death—hence the greater potential for *after*-death communication. Again, further research could clarify the extent to which the finding of increased ADC with age is valid and, if so, its cause(s).

Regarding marital status, the results of this study support the likelihood that the widowed population has more ADC. However, what is not clear from the ADC studies is whether the widowed have more ADC than other bereaved people, those in the general population, or those who are single, married, divorced, etc. More research is needed to reach conclusions regarding this matter. Results of this study do indicate a tendency for those widowed who were happily married to be more likely to have ADC than those who were not happily married (Grimby, 1993, 1998; Rees, 1971). Inconclusive is whether length of marriage is a strong predictor of ADC. More research is needed to explore the relationship between marital status and ADC.

Religious variables did not emerge as strongly associated with reports of ADC. Confirmatory research is needed regarding whether people of various religious affiliations (Christian, Buddhist, etc.) or religious categories (liberal, conservative, etc.) report more ADC—and

whether belief in a loving God rather than a judgmental God may be associated with increased reports of ADC.

One last, highly speculative point at least deserves mention. Taken together, the admittedly very few studies that addressed ethnicity indicated ADC prevalence, from most to least, among African-Americans, Mexican-Americans, Caucasians, and Japanese-Americans. In the US, where many ADC studies have been conducted, factors related to cultural expectations and social oppression have resulted in reduced educational and income-generating opportunities among the first two groups, with greater opportunities among the latter two groups. ADC also may be less likely among people with more education and income. It may be that the tentative finding of fewer ADC experiences among those who report more income is an artifact of the tendency for those who are more educated to have higher incomes. Taken with the finding of lower incidence of ADC among males, it may be that dominance of rationality in one's psychological functioning—whether innate (male), cultivated (by education), or both—reduces experiencing, remembering, and/or reporting of ADC. These factors would, of course, vary by culture—and represent a fascinating direction for future ADC research.

### **Benefits or Detriments**

ADC research overwhelmingly indicates that ADC is nearly always beneficial to experiencers. Among the 35 research studies, other research studies, and other relevant literature are countless first-hand accounts of ADC in which percipients experienced their ADC as positive, healing, life-enhancing, comforting, consoling, transformative, life-saving, joyful, uplifting, and/or pleasant. Of those people who had a distressing experience—frightening or confusing—most of them seemed to suffer as a result of lack of understanding—their own and/or others'—rather than from the contents of the ADC itself. Occasionally some people felt sad after the ADC and missed their loved one even more (Devers, 1997), but this reaction was very much the exception. Arcangel (2005) stated that “individuals who were initially frightened, uncomfortable, or in acute grief, declared that their encounters [ADC experiences] became increasingly beneficial as they gained understanding about the phenomenon, shed their grief, or both” (p. 286). The following example illustrates a typical “negative” experience: Out of a total of 24 research participants, Joan and Susan were the only two who were scared during their respective ADC experiences with-

out also indicating a positive feeling. Joan explained that when she later realized the contact was non-threatening, she regretted missing the opportunity to communicate with her sister and wanted another chance. During Susan's first contact she was scared and thought she must be crazy, but during her second one she felt happy and blessed (Whitney, 1992, p. 50).

Thus, distressing ADC represented a very small minority of experiences, and in most cases, the distress apparently arose from experiencers' inability to contextualize and integrate the experiences. Because of this tendency, it would be ideal for health professionals and the general public to know that ADC is a common, normal experience with beneficial or potentially beneficial effects, even if ADCrs sometimes react initially with fear or puzzlement.

### **Mental Health Status**

Several researchers commented on the mental/psychological health of participants. Only three mentioned lack of mental health, but even those researchers did not see ADC as hallucinations in the pathological sense. Overwhelmingly, data indicate that ADC occurs among normal, healthy people. On this topic, Greeley (1975) asserted:

Such paranormal experiences—by definition, lying outside the normal—are generally viewed as hallucinations or symptoms of mental disorder. But if these experiences were signs of mental illness, our numbers would show the country is going nuts. What was paranormal is now normal. It's even happening to elite scientists and physicians who insist that such things cannot possibly happen. (p. 47)

Indeed, a conclusion that at least one third of the population—many of whom appear to meet criteria for mental health—is even temporarily insane at the time of their ADC does not stand to reason. A much saner conclusion is that ADC are both common and normal and are not themselves indications of mental unhealth.

### **Sensory Modalities**

According to the results of our study, ADC may occur as any type and any combinations of types. Given results from the top five studies yielding data on types of ADC, it is possible that the most common types are sleep ADC, visual ADC, and sense of presence. More research is needed to support these findings.

Regarding the term “dream ADC,” one point may be worthwhile for future researchers to consider. Our own experiences with ADC, as well as reports from family members, friends, and clients, has indicated to us that people who recall an ADC from when they were sleeping often comment, and even emphasize, that the experience was not like a dream. That is, the experience felt qualitatively different, including more real, than dreams have felt. ADC also differs from dreams in other ways: Whereas dream memory tends to be quite ephemeral, ADC memory tends to remain vivid over time, and whereas upon awakening a dreamer usually considers a dream unreal, ADCrs often if not usually consider the ADC to have been a real experience. We have wondered whether a paucity of terms to describe various experiences that occur during sleep have forced ADCrs to use the only term available for sleep phenomena—dream—to describe their experiences, yet that term conveys REM dream qualities that tend not to apply to ADC. An analogy is how Western culture has one primary word for “snow,” a phenomenon that, in some other cultures, has numerous terms to differentiate various types of snow. For this reason, we have discontinued using the term “dream ADC” and have implemented “sleep ADC”—to accurately convey the circumstances in which the ADC occurred without erroneously conveying REM dream qualities. We offer this distinction to future ADC researchers in hopes they, too, will adopt it.

### **Unanticipated Finding**

A common theme we found among ADC researchers was percipients’ reticence to report their ADC. We read account after account of ADCrs’ reluctance to share their ADC for fear of being judged, ridiculed, and/or thought insane (Amatuzio, 2006; Ring, 2008). This finding possibly indicates that ADC may be underreported.

Several ADC researchers, particularly those who conducted interviews, reported ADCrs’ relief at having talked with someone about the experience (Guggenheim, & Guggenheim, 1995). Some ADCrs reported that the research study was the setting in which they first discussed the experience with anyone. For example, Olson et al. (1985) found that 54% of study participants had never told anyone about their ADC experience(s) prior to their being interviewed for the research study.

Combining this finding with the “rationality” hypothesis described above yields another tantalizing possibility. It may be that people with more innate and/or cultivated tendency toward rationality do not experience ADC less but are more reluctant to report it because it, like

other transpersonal experiences, is not rational but transrational (Wilber, 2000).

In any case, further research is needed to support even this finding regarding reluctance to report as well as to determine conditions that help facilitate percipients' willingness to share their ADC experiences with others—a process that reportedly often enhances ADCr's well-being (Knight, 2011). In general, what seems beneficial is for health professionals and others to listen without judgment and to help percipients come to their own understandings of their experiences (Amatuzio, 2002, 2006; Hastings, 1983; Wooten-Green, 2001). In addition, for ADCr's who express confusion and/or fear of the experience when, as appears almost always to be the case, not the experience itself but ADCr's difficulty contextualizing the experience is the source of the confusion and/or fear, it may be helpful for ADCr's to learn many of the results of this study: that at the very least, a third of people report this experience sometime in their lives; that the experience itself is unrelated to mental disorder; and that the experience is almost always beneficial for experiencers who can overcome lack of information and self-imposed fear. To this end, based on the findings from this study, we have developed a one-page ADC Fact Sheet that healthcare providers and others may find helpful in working with distressed ADCr's to promote their peace of mind and their ability to benefit maximally from the ADC. The ADC Fact Sheet is available online at <http://www.coe.unt.edu/sites/default/files/22/129/ADC.pdf>. The effectiveness of this fact sheet for this purpose is, itself, a matter for future research.

### **Strengths and Weaknesses of ADC Research Studies**

Reflecting back on the totality of research on ADC, we observed both strengths and weaknesses of the existing body of research. Regarding strengths of the studies, a good majority exhibited clarity/completeness of explanation of purpose of the study and description of the method and results/conclusions/discussions. Results varied considerably—strong in some but not all cases—in relation to representativeness of the sample surveyed, sampling method, sample size, bias, and/or response to bias.

Regarding weaknesses of the studies, several studies were weak with regard to obtaining a high response rate and attempting to explain differences between respondents and non-respondents. Lastly, most studies were weak when it came to providing support or evidence for validity and reliability of the instrument used to assess ADC.

To strengthen the field of ADC studies, future researchers could use

the rubric we developed to design strong studies, aiming for the highest criteria related to each rubric item. An important fundamental to the field would be development of an instrument that researchers could use to validly and reliably assess ADC. Because most ADC researchers have conducted their studies with members of Western countries/cultures, the field would be enhanced by increased attention to ADC among non-Western people.

### **Limitations of the Study**

Even though we were very thorough in our attempt to find and include every study that met criteria for inclusion in our study, given the manner in which studies kept surfacing in unexpected ways, it is possible that we missed studies that should have been included in our systematic review. Furthermore, despite our conscientiousness, given the length of time over which we conducted our review, it is quite possible that we missed elements or factors that researchers reported and we should have included in our results.

Our findings were based on data from what we found to be the methodologically strongest ADC research studies, and our determination of methodological strength was based on our development and use of a rubric to assess methodological quality. Some of the rubric items were quite subjective, which made it difficult to have high agreement by using the rubric alone. Initial independent ratings from the rubric never exceeded  $r = .79$ , which was below the  $r = .80$  that is typically considered acceptable (LeBreton & Senter, 2008). Additionally, inter-rater reliability of independent ratings did not increase with increased use of the rubric, even after discussion meetings with the raters. However, the primary goal was to use the rubric as a tool to critically evaluate the studies, and that goal seemed to be met. Using the rubric independently and then having post rating discussion meetings was essential to the process of critically evaluating the 35 ADC research studies with a final reliability of  $r = .9$ .

Furthermore, even though all three raters were encouraged to address each item of the rubric separately and to be unbiased in applying the rubric to each study, there was unavoidable inherent bias. From discussion among the raters, it became clear that one or more raters could be biased for or against a study for various reasons, could become fatigued and less attentive to detail, and could neglect to check to make sure they were staying in line with criteria for each of the 11 rubric items.

Thus, although we found the rubric to be a very helpful tool to assess methodological quality, and feel confident that the rubric design based on literature and expert input renders our results valid and that final inter-rater reliability renders our results reliable, replication of our process by another team would strengthen our confidence even further. Because repeated consultation among the research team was required to reach acceptable inter-rater reliability, we do not assume that other researchers who apply the rubric to the assessment of methodological quality of research in other areas of research inquiry would necessarily achieve reliable results.

### **Recommendations for Future Research**

We have already mentioned several areas of needed research on ADC, including more research with non-Western populations, development of an instrument to validly and reliably assess ADC, and further investigation of our “rationality” hypothesis. In addition to these, we have three more.

In their classic work, Osis and Haraldsson (1977) found that physicians and nurses observed deathbed phenomena, including ADC, among their patients. Some recent authors have addressed that professionals who work with people in critical and near-death circumstances themselves report experiencing ADC associated with their work. Kelly (2002) found work-related ADC among emergency service workers. Ring (2008) presented a case study of this type. O’Driscoll (2017), a recently retired emergency room physician, revealed several experiences of ADC. A topic seemingly ripe for research is investigation of the prevalence of ADC among critical care workers—and the effect of these experiences on them both personally and professionally.

ADC researchers recounted many people’s wishes to experience ADC (Arcangel, 2005; Guggenheim, & Guggenheim, 1995). Botkin (2000, 2005; Botkin & Hannah, 2013; Botkin et al., 1998; Hannah et al., 2013) developed a psychotherapy intervention called Induced After-Death Communication (IADC) by which he or someone he trained facilitates a psychologically receptive mode, thus increasing the likelihood of a client/patient having ADC for the purpose of reduction in distressing grief symptoms. Greer (2003) wrote a book on how to communicate with departed loved ones in which she suggested ways to be more open and receptive to ADC. Guggenheim and Guggenheim (1995) recommended open-mindedness, prayer, and meditation to help increase the likelihood of having ADC. Hastings (2012) and colleagues



(Hastings et al., 2002) described use of a psychomanteum to facilitate ADC. Common among many sources is the concept of being open and receptive. Research is needed regarding this contention as well as, in general, the effectiveness of techniques to facilitate ADC.

## Implications and Final Conclusions

Based on a thorough review of research, ADC seems to be a common, normal experience with great potential for psychospiritual benefit. In cases when ADCrs report distress, a climate of acceptance, support, and psychoeducation seems to help transform the experience into one that enhances wellbeing.

Hopefully the results of this study will provide helpful information to professionals and lay people alike, contribute to the normalization of ADC, and provide opportunity for maximum benefit to ADCrs. Considering our finding that the primary impediment to benefitting from ADC is lack of information that normalizes the experience, we have made the ADC Fact Sheet available online with permission for anyone to reproduce and distribute it for educational or healthcare purposes.

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