

Factors Moderating the Impact of After Death Communications on Beliefs and Spirituality

OMEGA—Journal of Death and Dying

2023, Vol. 87(3) 884–901


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DOI: 10.1177/00302228211029160

journals.sagepub.com/home/ome

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Abstract

After death communications (ADCs) are defined as perceived spontaneous contacts with living individuals by the deceased. This research presents on a subset of data from a recent large international survey of individuals who experienced ADCs and provided systematic information regarding these experiences. In our research we explore the impact of having an ADC on reported spirituality, religiosity, beliefs and attitudes about death and dying and also explore the moderating factors of this impact. We found that having an ADC was perceived as a positive life experience and that it was associated with a reduction in fear of death, belief in life after death and that the deceased could communicate with the living, and increased reported spirituality. Moderating factors include aspects of having or desiring physical contact with the deceased as well as perceiving some emotional reaction to the ADCs. Future directions for research exploration are also provided based on our findings.

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Keywords

death, spirituality, religiosity, fear of death, after death communication

Introduction

Experts have defined after death communication (ADC) in a variety of ways (Guggenheim & Guggenheim, 1995; Houck, 2005; La Grande, 1997; Long, 1999). Generally, an ADC is defined as a spontaneous phenomenon in which a living individual has a feeling or sense of direct contact with a deceased person. These contacts or communications are *direct* in that they are not mediated by other persons, such as psychics and mediums, or by utilizing particular rituals or devices specifically intended to enable contact with the deceased, and *spontaneous* in that they are not solicited by the recipients. ADCs can occur in a multitude of forms and situations as well as in a waking or sleeping state. ADCs are reported as occurring in different forms and levels of intensity, with a variety of associated sensations, including vision, taste, hearing, smell, and feeling both physical presence, such as touch or pressure, as well as a sense of the presence of the deceased. ADCs occur across cultures, race, age, socio-economic status, educational level, gender, and religious beliefs (Streit-Horn, 2013).

ADCs occur more frequently than one may imagine, with an estimated 25–50% of mourners worldwide having experienced one or more spontaneous ADCs (Guggenheim & Guggenheim, 1995; La Grande, 1997). According to a *European Values Study*, 127 million or 25% of Europeans report experiencing an ADC, and 20–40% of Americans report experiencing an ADC in their lifetime (Haraldsson, 2006). Other surveys of persons, in particular mourners, report that between 50% and 60% had one or several ADCs (Burton, 1982; Castelnovo et al., 2015; Haraldsson, 2012; Kalish & Reynolds, 1973). Overall, testimonies collected in different countries and over the last centuries suggest this phenomenon to be fairly universal and timeless (Guggenheim & Guggenheim, 1995). Additionally, experts in the fields of grief, bereavement, counseling, and palliative care support the idea that ADCs are common, natural experiences that most individuals find comforting, encouraging, and sometimes even life-saving (Arcangel, 2005; Devers, 1997; Guggenheim & Guggenheim, 1995; La Grande, 1997, 1999; Long, 1999).

Despite their seemingly widespread occurrence, we know little about who is most likely to experience an ADC or why or when. We also know very little about the impact of an ADC on the individual experiencing it. What little research does exist, appears to support the idea that the emotional impacts and interpretations of ADCs can vary across individuals. For example, research by Datson-Marwit et al. (1997) demonstrated that 86% of their participants who reported having an ADC characterized the experience as comforting,

while 6% found it upsetting, and 8% found it frightening. Individuals who have experienced ADCs have reported a decrease in negative feelings such as sadness, grief, longing, incomplete communication, regret, and remorse, as well as an increase in positive feelings of understanding, appreciation, gratitude, love, and forgiveness (Hastings, 2012). Death anxiety has tended to be lower among individuals who reported having contact with a deceased loved one. However, the data further reveal that this potential benefit was likely to occur only among older people who interpreted ADCs from a religious perspective and that these experiences were also likely to have strengthened their existing religious beliefs (Krause, 2011). Kwilecki (2011) reported that having an ADC tended to reinforce comforting religious beliefs, including assurances of a fulfilling afterlife, as well as increased positive explanations of unexpected deaths (Kwilecki, 2011). Likewise, Keen et al. (2013) evaluated individuals who reported ADCs and found that the sense of presence of a deceased loved one was reported as comforting. However, those individuals who admitted they were struggling to make sense of a loss tended to perceive ADCs as frightening (Keen et al., 2013). Steffen and Coyle (2011) identified similar themes in a study of 12 participants who reported sense-of-presence ADCs and reported that although participants described the experiences as almost exclusively beneficial, the accounts often revealed a struggle with culturally available understandings that created cognitive dissonance in some (Steffen & Coyle, 2011).

In the study conducted by Streit-Horn (2013) participants frequently endorsed that the experience of an ADC was followed by increased feelings of reassurance and comfort. This comfort was attributed to their associated new-found knowledge of the continued existence of the deceased individual following bodily death and of an ongoing relationship with the deceased (Streit-Horn, 2013). In a study that evaluated ADCs in parents of deceased children, the majority of the parents reported that their beliefs about life after death had changed since their child's death (Sormanti & August, 1997). In the same study, the parents reported a strengthening of existing beliefs, several reported having new beliefs, and some found comfort, claiming that their experiences confirmed that their child was in a safe place with other deceased family members or with God. For them, this was confirmation of an after-life (Sormanti & August, 1997).

Whatever the ontological status of ADCs might be, they are perceived as real and significant by a great number of individuals who experience them, and therefore certainly deserve their place on the consciousness research agenda. Existing research does appear to provide some support for the claim that experiencing an ADC can have a positive impact and may even change beliefs. This is not, however, a universal finding, and further research is needed to identify factors that contribute to whether ADCs are perceived as positive or negative. In this current study, we wish to map the impacts reported by people who have experienced an ADC, including religious and spiritual beliefs, as well

as beliefs about the afterlife and deceased individuals contacting the living, and explore the factors that moderate such effects. Streit-Horn (2013) found a common theme of reticence among participants to report their ADCs (Streit-Horn, 2013); many endorsed reluctance to share their ADCs for fear of being judged, ridiculed, and/or stigmatized (Amatuzio & Matthews, 2007; Ring, 2008). This finding possibly indicates that ADCs may be underreported. For example, Olson et al. (1985) reported that 54% of study participants had never told anyone about their ADCs prior to their being interviewed for the research study.

Several ADC researchers, particularly those who conducted interviews, reported that participants expressed relief in having an opportunity to discuss their ADCs, and many reported positive impacts of both the ADC and sharing it (Beischel et al., 2015; Guggenheim & Guggenheim, 1995; Keen et al., 2013). Thus, an improved understanding of the phenomenology and impact of ADCs is important not only for research but also to disseminate knowledge about the prevalence of such experiences and potentially reduce stigma, so as to encourage open discussion and self reflection (Steffen & Coyle, 2011). Additionally, increased knowledge about ADCs is important for the public at large, since these experiences may provide a new perspective of death and life.

Our work is a small part of a larger international research project that aims to explore the phenomenology, and impact of ADCs more fully in several countries (Elsaesser et al., 2021). While a primary objective of the larger overall project is to gain a better understanding of the phenomenology and the impact of spontaneous ADCs, in this paper, we will focus on the impact of ADCs on beliefs and spirituality and attitudes about death and dying, as well as the factors that moderate such changes. Research questions focus on exploring not only the self-reported changes in beliefs and attitudes in individuals who experienced an ADC, but also investigating moderating factors of this impact.

Materials and Methods

Procedure

This research involved online data collection between February 2018 and January 2020 in the three languages of the project, namely in English, French and Spanish. The survey included 194-items and was completed by participants of several European countries, Latin American countries and the United States of America. The research project recruited adults only and received ethical approval from the University of Northampton (ref: FHSRECSS00084) and was pre-registered (ref: KPU Registry 1046) with the Koestler Unit Study registry at the University of Edinburgh (<https://koestlerunit.wordpress.com/study-registry/registered-studies/>). The survey landing page reminded participants of the nature of the study and of what participation would entail, including that

data were volunteered anonymously so it was not possible to withdraw data once submitted. Respondents confirmed in writing that they consented to participate in order to progress to the questionnaire. Participants were recruited using a purposive snowball sampling method by advertising the survey during public talks and through social media forums that specialize in ADCs and related phenomena. Interested parties were referred to the Principal Investigator's web page that gave further information about the project and provided a link to the survey. Each survey version was made 'live' for pre-specified periods of time — the English version from 9 August 2018 – 31 January 2019, the French version from 15 September 2018 – 31 March 2019, and the Spanish version from 21 October 2018 – 30 April 2019. Participants completed the survey in their own time. There was no facility to save progress so the whole questionnaire needed to be completed in a single session (though the web link would not time out and so could be left open for as long as required). Participants needed to complete the whole measure for their data to be submitted for subsequent analysis. Voluntary participants were oriented to the project, consented, and invited to answer a one-time online survey about any ADCs they had experienced. Data was collected and stored on a secure, password-protected network with only the Principle Investigators having access in order to help protect the security of the data. Participants also provided demographics and socioeconomic characteristics. Nine hundred and ninety-one participants completed both the consent form and the questionnaire. The main themes of the questionnaires were: circumstances of occurrence of ADC, type of ADC, message conveyed in the ADC, emotions associated with ADC, sense of reality associated with the experience, impact and implications for the grieving process, profile of the recipient, and profile of the deceased person perceived (including cause of death). Quantitative research findings of the complete data set have been summarized and are in submission for publication. Qualitative analyses on specific themes have been or will be published individually (Woollacott et al., 2021). In this current manuscript, we report the impact of specific variables on changes in beliefs and spirituality in those reporting ADCs and explore moderating factors on such changes.

Statistical Analysis

To assess change in beliefs pre- and post-ADC, we calculated the difference between beliefs at both time points, such that higher difference indicates increased beliefs after the ADC. The change in beliefs was assessed using a paired-sample t-test. For the purpose of calculating belief changes for variables assessed on a Yes/No/Unsure scale, "Yes" was given a value of 2, "Unsure" was given a value of 1, and "No" was given a value of 0.

We used ordinal and binary logistic regression models to investigate factors which predict changes in beliefs from pre- to post-ADC. Initially, each

independent variable was considered in a separate univariate model predicting the change outcome. If an individual variable reached level of significance of 0.10 or below, it was subsequently included in a multiple logistic regression model, simultaneously including (and controlling for) all predictors with $p \leq 0.10$. Thus, the p -values obtained from multiple regression models show statistical significance for each variable after adjusting for all other variables in the model. For categorical variables, one category was chosen as a 'reference' category, and comparisons for all other categories against the reference are reported. For religious and spiritual beliefs, change was modeled as a dependent variable with three ordinal levels: 3 = beliefs increased; 2 = beliefs remained the same; 1 = beliefs decreased. For beliefs in life after death and the ability of deceased people to contact the living, change was modeled as a binary dependent variable: 1 = beliefs strengthened; 0 = beliefs remained the same or weakened. In the latter case, the choice of a binary dependent variable was made for ease of interpretation and for practical reasons since there were very few individuals who weakened their beliefs in life after death or the ability of the deceased to contact the living. In all analyses, the models predicted an increase in beliefs post-ADC.

In both univariate and multivariate analyses, the strength of association between a factor and the outcome of interest was expressed as an odds ratio (*OR*) and its corresponding 95% confidence interval (*CI*). An *OR* of 1 indicates no effect, such that, for categorical factors, increased beliefs are not more likely in either of the categories being compared, while values greater or less than 1 indicate that the category of interest is associated with higher or lower odds of the outcome, respectively.

A p -value was taken as significant if less than 0.05. All statistical analyses were conducted in SAS 9.4.

Results

Nine hundred ninety one individuals who reported on their experienced ADCs were included in the study. The overall ADC group consisted of 143 males (14.5%), 842 females (84.9%), and 4 others (0.4%). The mean age of participants was 51.19 ± 13.26 years (min: 18 max: 89). Four hundred and twelve were English speaking (41.6%), 434 were French speaking (43.7%) and 145 were Spanish speaking (14.7%). Demographic information is summarized in Table 1.

We examined our hypotheses that experiencing an ADC would be perceived as a positive life experience in the majority of participants and found this to be supported. Nearly one-third of participants considered their perceived ADC as 'life changing' and 57.8% endorsed that their ADC was 'moderately important' or 'important'. We further hypothesized that having an ADC would be associated with reduced fear of death. This hypothesis was supported. Following the perceived ADC, 31% ($n=308$) of participants defined their fear of death as

Table 1. Descriptive Statistics and Probable Moderating Factors for Samples of CORTs.

Variable	N ^a	Mean ± SD or count (%)
Age	981	51.19 ± 13.26
Sex (female)	981	84.9
Education	986	
University	475	47.8
College or equivalent	174	17.5
Secondary level-university	220	22.2
Secondary school	117	11.8
Multiple ADCs (yes)	990	80
Physical contact (yes)	982	47.5
Saw deceased (yes)	989	46.2
Heard deceased (yes)	986	43.3
Touched deceased (yes)	498	13.2
Smelled deceased (yes)	982	27.6
Received message (yes)	981	58.6
Sensed presence of deceased (yes)	987	34.1
Crisis ADC (yes)	988	20.7
Frightened by ADC (yes)	987	12.1
Sentiment about ADC (positive)	987	91
Knew the deceased (yes)	982	90.2
Comfort from ADC (yes)	907	73

^aN is number of observations for each variable in each sample.

decreased, 29.2% ($n = 290$) reported their fear of death had disappeared, while 32.8% ($n = 326$) described no change in their fear of death, and only 0.8% ($n = 8$) mentioned an increase.

We also hypothesized that experiencing an ADC would be associated with increased beliefs in life after death as well as other spiritual or religious beliefs, and this was only partially supported. There was a statistically significant increase in participants regarding endorsed spirituality ($t = 18.94$, $p < 0.001$) but not in being religious ($t = 0.371$, $p = 0.710$) after experiencing ADC (Table 2). Overall, there was a significant change observed regarding the belief in life after death ($t = 16.26$, $p < 0.001$) and the belief that the deceased can communicate with living people. ($t = 19.68$, $p < 0.001$) (see Table 2).

We also wished to examine, in an exploratory fashion, the moderating factors for such changes. Probable moderating factors are shown in Table 1. As a first step, we explored predictors of changes in beliefs pre- and post-ADC in univariate logistic regressions. In the follow-up multivariate analyses, we included variables with a p value < 0.1 in univariate analysis as candidate predictors. All multivariate results report effects controlling for other variables.

Table 2. Effect of ADC on Changes in Religiosity, Spirituality, Life After Death and Deceased Can Contact Living Persons.

Variable	N ^a	Mean ± SD	Median	Min and max	t	p
Change in religiosity	983	0.01 ± 0.77	0	-4 and 4	0.37	0.71
Change in spirituality	986	0.57 ± 0.94	0	-3 and 4	18.95	<.0001
Change in belief about life after death	984	0.34 ± 0.65	0	-2 and 2	16.27	<.0001
Change in belief about deceased can contact living persons	987	0.45 ± 0.72	0	-2 and 2	19.69	<.0001

^aN is number of observations for each variable in each sample.

Multivariate analysis revealed that having multiple ADCs was the only moderating factor that was related to the change in religious beliefs (see Table 4). Specifically, participants with multiple ADCs showed an almost 50% increase in the odds of endorsing increased religious beliefs after ADC, compared with individuals who did not report multiple ADCs.

Regarding spirituality, participants who endorsed an ADC with physical contact showed a 51% increase in odds of strengthening their spiritual beliefs post-ADC, compared with those who reported no physical contact experience. In addition, endorsing experiencing an ADC at the moment of death of the perceived person (a “crisis ADC”) and an ADC that brings comfort trended toward significance in enhancing spirituality, although they did not reach statistical significance.

Our research further supports that trying to touch the deceased, receiving a message from the deceased, or being frightened by the contact from the deceased were significant moderating factors in increased belief in life after death post-ADC. Regarding change in beliefs in life after death, participants who i) endorsed trying to touch the deceased showed 89% increased, ii) received a message from the deceased showed 41% decreased, and iii) endorsed being frightened by the ADC showed 157% increased odds in believing in life after death after their ADC than those who did not endorse such experiences.

When examining beliefs about deceased persons being able to contact the living, those participants who i) tried to touch, ii) were frightened by the contact with the deceased and iii) perceived ADC as comforting or emotionally healing showed higher odds or increased belief post-ADC versus those participants who did not report such experiences (see Tables 3 to 10).

Discussion

ADCs occur and are generally experienced as meaningful in a positive way. The majority of participants in our study endorsed that their ADC was ‘important’,

Table 3. Univariate Analyses Predicting Change in Religious Beliefs Pre- and Post-ADC (Ordinal Logistic Regression).

Predictor	N	Category (reference)	OR	Wald ₁	p	95% CI for OR
Age	971	—	0.99	1.22	.27	[0.98, 1.005]
Sex	977	Female (male)	1.51	4.08	.04	[1.01, 2.25]
Education	978	—	1.13	3.41	.07	[0.99, 1.28]
Multiple ADCs	981	Yes (no/unsure)	1.43	3.84	.05	[1.00, 2.03]
Physical contact	972	Yes (no/unsure)	1.31	3.46	.06	[0.99, 1.74]
Saw deceased	979	Yes (no/unsure)	0.94	0.18	.67	[0.71, 1.25]
Heard deceased	976	Yes (no/unsure)	0.78	2.83	.09	[0.59, 1.04]
Touched deceased	493	Yes (no/unsure)	1.05	0.06	.08	[0.68, 1.65]
Smelled deceased	972	Yes (no/unsure)	1.37	3.85	.04	[1.00, 1.88]
Received message	972	Yes (no/unsure)	0.85	1.32	.25	[0.63, 1.13]
Sensed presence of deceased	977	Yes (no/unsure)	0.89	0.51	.47	[0.66, 1.20]
Crisis ADC	978	Yes (no/unsure)	0.91	0.26	.60	[0.64, 1.29]
Frightened by ADC	977	Yes (no/unsure)	1.07	0.12	.72	[0.70, 1.65]
Sentiment about ADC	977	Positive (negative/neutral)	0.71	1.67	.19	[0.43, 1.18]
Knew the deceased	972	Yes (no/unsure)	1.62	3.73	.05	[0.99, 2.66]
Comfort from ADC	978	Yes (no/unsure/N/A)	1.10	0.40	.052	[0.80, 1.52]

OR = odds ratio; Wald₁ = Wald statistic with 1 degree of freedom; p = p-value; CI = confidence interval.

Table 4. Multivariate Analysis Predicting Change in Religious Beliefs Pre- and Post-ADC (Ordinal Logistic Regression), N = 939.

Predictor	Category (reference)	OR	Wald ₁	p	95% CI for OR
Sex	Female (male)	1.49	3.71	0.05	[0.99, 2.25]
Education	—	1.10	2.13	0.14	[0.96, 1.26]
Multiple ADCs	Yes (no/unsure)	1.49	4.36	0.03	[1.02, 2.16]
Physical contact	Yes (no/unsure)	1.26	2.42	0.11	[0.94, 1.71]
Heard deceased	Yes (no/unsure)	0.77	2.85	0.09	[0.57, 1.04]
Smelled deceased	Yes (no/unsure)	1.15	0.72	0.39	[0.83, 1.59]
Knew the deceased	Yes (no/unsure)	1.54	2.83	0.09	[0.93, 2.57]

OR = odds ratio; Wald₁ = Wald statistic with 1 degree of freedom; p = p-value; CI = confidence interval.

or even ‘life changing’ and only 12.1% of the participants reported their ADC experience as frightening, which is very comparable with previous research in the area. Belief in life after death and the fact that the deceased can communicate with the living also significantly increased in participants after their

Table 5. Univariate Analyses Predicting Change in Spiritual Beliefs Pre- and Post-ADC (Ordinal Logistic Regression).

Predictor	N	Category (reference)	OR	Wald ₁	p	95% CI for OR
Age	974	—	0.99	0.38	.53	[0.98, 1.01]
Sex	980	Female (male)	0.98	0.00	.94	[0.68, 1.41]
Education	981	—	1.03	0.00	.95	[0.89, 1.12]
Multiple ADCs	984	Yes (no/unsure)	1.27	2.16	.14	[0.92, 1.76]
Physical contact	975	Yes (no/unsure)	1.52	10.18	.00	[1.17, 1.96]
Saw deceased	982	Yes (no/unsure)	1.07	0.29	.59	[0.83, 1.38]
Heard deceased	979	Yes (no/unsure)	0.95	0.14	.70	[0.73, 1.23]
Touched deceased	494	Yes (no/unsure)	1.21	0.90	.34	[0.81, 1.82]
Smelled deceased	975	Yes (no/unsure)	0.99	0.00	.97	[0.74, 1.32]
Received message	975	Yes (no/unsure)	0.84	1.52	.21	[0.65, 1.10]
Sensed presence of deceased	980	Yes (no/unsure)	0.91	0.41	.51	[0.69, 1.19]
Crisis ADC	981	Yes (no/unsure)	0.76	2.80	.09	[0.55, 1.04]
Frightened by ADC	980	Yes (no/unsure)	1.28	1.58	.20	[0.87, 1.88]
Sentiment about ADC	980	Positive (negative/neutral)	1.41	1.98	.15	[0.87, 2.28]
Knew the deceased	975	Yes (no/unsure)	0.85	0.48	.48	[0.54, 1.33]
Comfort from ADC	981	Yes (no/unsure/N/A)	1.43	5.69	.02	[1.06, 1.92]

OR = Odds ratio; Wald₁ = Wald statistic with 1 degree of freedom; p = p-value; CI = confidence interval.

Table 6. Multivariate Analysis Predicting Change in Spiritual Beliefs Pre- and Post-ADC (Ordinal Logistic Regression), N = 967.

Predictor	Category (reference)	OR	Wald ₁	p	95% CI for OR
Physical contact	Yes (no/unsure)	1.51	9.60	0.002	[1.16, 1.96]
Crisis ADC	Yes (no/unsure)	0.72	3.67	0.05	[0.52, 1.00]
Comfort from ADC	Yes (no/unsure/N/A)	1.35	3.81	0.05	[0.99, 1.82]

OR = Odds ratio; Wald₁ = Wald statistic with 1 degree of freedom; p = p-value; CI = confidence interval.

reported ADC. Finally, experiencing an ADC appears to have a significant impact on reducing fear of death in our participants. This is consistent with much of the existing literature, which proposes that ADCs may serve to provide an ongoing connection to the deceased and suggests to those who are living that death is not final, thus presumably reducing fear of death (Keen et al., 2013; Kwilecki, 2011; Steffen & Coyle, 2011). Although this may be theoretically plausible, identification of the causes for reductions in fear of death cannot be discerned with the current data, and additional research exploring the causal thought processes of individuals who experience and ADC would be beneficial.

Table 7. Univariate Analyses Predicting Beliefs About Life After Death Pre- and Post-ADC (Binary Logistic Regression).

Predictor	N	Category (reference)	OR	Wald ₁	p	95% CI for OR
Age	972	—	0.99	0.01	.91	[0.98, 1.01]
Sex	978	Female (male)	1.18	0.63	.42	[0.78, 1.79]
Education	977	—	0.87	6.54	.01	[0.73, 0.95]
Multiple ADCs	981	Yes (no/unsure)	1.02	0.01	.91	[0.71, 1.48]
Physical contact	973	Yes (no/unsure)	1.08	0.32	.56	[0.81, 1.44]
Saw deceased	980	Yes (no/unsure)	1.03	0.05	.82	[0.77, 1.37]
Heard deceased	977	Yes (no/unsure)	0.85	1.20	.27	[0.63, 1.13]
Touched deceased	494	Yes (no/unsure)	1.57	4.12	.04	[1.01, 2.43]
Smelled deceased	973	Yes (no/unsure)	1.07	0.17	.67	[0.78, 1.46]
Received message	973	Yes (no/unsure)	0.79	2.35	.12	[0.59, 1.06]
Sensed presence of deceased	978	Yes (no/unsure)	0.91	0.35	.54	[0.67, 1.23]
Crisis ADC	979	Yes (no/unsure)	0.75	2.35	.12	[0.52, 1.08]
Frightened by ADC	979	Yes (no/unsure)	2.02	12.10	.00	[1.36, 3.01]
Sentiment about ADC	979	Positive (negative/neutral)	1.08	0.09	.75	[0.64, 1.84]
Knew the deceased	974	Yes (no/unsure)	0.96	0.02	.88	[0.58, 1.59]
Comfort from ADC	981	Yes (no/unsure/N/A)	1.39	3.78	.05	[0.99, 1.95]

OR = Odds ratio; Wald₁ = Wald statistic with 1 degree of freedom; p = p-value; CI = confidence interval.

Table 8. Multivariate Analysis Predicting Beliefs About Life After Death Pre- and Post-ADC (Binary Logistic Regression), N = 484.

Predictor	Category (reference)	OR	Wald ₁	p	95% CI for OR
Education	—	0.89	1.39	0.23	[0.73, 1.07]
Touched deceased	Yes (no/unsure)	1.89	7.24	0.01	[1.18, 3.00]
Received message	Yes (no/unsure)	0.59	5.53	0.02	[0.38, 0.91]
Frightened by ADC	Yes (no/unsure)	2.57	10.83	0.001	[1.46, 4.51]
Comfort from ADC	Yes (no/unsure/N/A)	1.21	0.55	0.45	[0.73, 2.01]

OR = Odds ratio; Wald₁ = Wald statistic with 1 degree of freedom; p = p-value; CI = confidence interval.

According to previous research, it is not unusual for those who report ADCs to not only experience a reduced fear of death, but also develop an increased interest in spirituality as well as the exploration of existential issues about God and the universe via religion (Streit-Horn, 2013). However, Barbato (1999) has previously reported no correlation between the occurrence of parapsychological experiences such as ADCs and endorsed religious, spiritual, or cultural status.

Table 9. Univariate Analyses Predicting Beliefs About Deceased Persons Can Contact the Living Persons Pre- and Post-ADC (Binary Logistic Regression).

Predictor	N	Category (reference)	OR	Wald ₁	p	95% CI for OR
Age	975	—	0.99	0.74	.38	[0.98, 1.01]
Sex	981	Female (male)	1.07	0.12	.71	[0.73, 1.57]
Education	980	—	0.82	9.09	.003	[0.72, 0.93]
Multiple ADCs	984	Yes (no/unsure)	0.75	2.78	.09	[0.54, 1.04]
Physical contact	976	Yes (no/unsure)	1.02	0.02	.87	[0.78, 1.33]
Saw deceased	983	Yes (no/unsure)	0.91	0.41	.51	[0.70, 1.19]
Heard deceased	980	Yes (no/unsure)	0.82	2.01	.15	[0.63, 1.07]
Touched deceased	495	Yes (no/unsure)	1.67	5.91	.01	[1.10, 2.54]
Smelled deceased	976	Yes (no/unsure)	0.92	0.26	.60	[0.68, 1.24]
Received message	976	Yes (no/unsure)	0.83	1.74	.18	[0.63, 1.09]
Sensed presence of deceased	981	Yes (no/unsure)	0.94	0.14	.70	[0.71, 1.25]
Crisis ADC	982	Yes (no/unsure)	0.94	0.10	.74	[0.68, 1.31]
Frightened by ADC	982	Yes (No/unsure)	1.56	5.15	.02	[1.06, 2.31]
Sentiment about ADC	982	Positive (negative/neutral)	1.23	0.71	.39	[0.75, 2.02]
Knew the deceased	977	Yes (no/unsure)	1.49	2.47	.11	[0.90, 2.48]
Comfort from ADC	983	Yes (no/unsure/N/A)	1.61	8.68	.003	[1.17, 2.21]

OR = Odds ratio; Wald₁ = Wald statistic with 1 degree of freedom; p = p-value; CI = confidence interval.

Table 10. Multivariate Analysis Predicting Beliefs About Deceased Persons Can Contact the Living Persons Pre- and Post-ADC (Binary Logistic Regression), N = 488.

Predictor	Category (reference)	OR	Wald ₁	P	95% CI for OR
Education	—	0.80	5.70	0.01	[0.66, 0.96]
Multiple ADCs	Yes (no/unsure)	0.61	3.62	0.05	[0.36, 1.01]
Touched deceased	Yes (no/unsure)	1.83	7.33	0.007	[1.18, 2.84]
Frightened by ADC	Yes (no/unsure)	2.07	6.31	0.02	[1.17, 3.66]
Comfort from ADC	Yes (no/unsure/N/A)	1.71	4.73	0.03	[1.05, 2.79]

OR = Odds ratio; Wald₁ = Wald statistic with 1 degree of freedom; p = p-value; CI = confidence interval.

The findings of our study suggest that ADCs tend to be associated with increased spirituality beliefs but they have less impact on religiosity beliefs. Interestingly, our participants who endorsed an ADC with physical contact were more likely to endorse increased spirituality than participants who reported no physical contact with their ADCs. The only factor that appeared to be significantly associated with increased religiosity in our study was having multiple ADCs. Rather than frequency, it has been shown in prior research that

religious, spiritual, and cultural beliefs tend to influence the content and interpretation of ADCs (Datson & Marwit, 1997; Lange & Houran, 1997; Rees, 1971). In studies by Keen et al. (2013) most participants reported using religious or spiritual beliefs to explain and understand their experiences of ADCs. It is unclear from the literature why having multiple ADCs may be associated with increased religiosity, and additional information regarding specific religious beliefs may need to be captured to more fully understand this finding.

When exploring moderating factors in belief in life after death after experiencing an ADC, we found that trying to touch the deceased, receiving a message from the deceased, or being frightened by the contact from the deceased all were significant. One can speculate that the increased salience of such experiences during an ADC could have an impact on belief in life after death. The physical or emotional components associated with such characteristics of an experienced ADC may help promote or solidify the belief in life after death more than other associated characteristics such as sense of presence. Simply put, we may have a paranormal experience in the form of an ADC but our physical sensations also inform our interpretation of it and the impact it may have upon our beliefs. Similarly, beliefs about the deceased contacting the living were significantly impacted by trying to touch the deceased, being frightened by the contact, and perceiving the ADC as healing or comforting. Thus perceived physical contact or emotions such as fear and comfort may inform our concept and understanding of an experienced ADC and thus help change our beliefs regarding the ability of deceased to contact the living.

Study Limitations

Research on spontaneous ADCs is challenging for multiple reasons including the obvious fact that one cannot predict when an ADC will occur, and it is not possible to construct a typical randomized controlled trial to test for their impacts (Hastings et al., 2002; Moody, 1992). There is certainly work in the area of what may be considered “induced ADCs” via use of a psychomanteum or other methodology to help facilitate contact with the deceased (Hastings et al., 2002; Moody, 1992), but this may be considered slightly different than what we explored in this study, which is a spontaneous ADC. Thus, in this study, we must depend on accurate self-reported information from participants regarding their ADC as well as their beliefs and thoughts both before and after the reported ADCs. This is obviously a limitation of the current research since we are depending on potentially flawed or incomplete recall of experiences, thoughts, beliefs, and emotions, which may have occurred many years ago. We do not have the space in this article to dive into the details of memory, emotion, and recall, but encourage interpretation of the current self-reported data with caution.

An additional limitation is the reticence of some individuals to share ADC experiences (Streit-Horn, 2013). Individuals who decided to share their experience on our survey may be different in some important way from other individuals who have experienced an ADC and chose not to share it. Individuals who decide not to share may be worried about being negatively judged for sharing such information or may have some other fear related to sharing. Some individuals may not wish to share such an intimate experience with others. Some individuals may have perceived the experience in a negative light, or found it too distressful or disturbing to discuss. Thus, it is a very real possibility that our sample is unique and not representative of all who experience an ADC. Without additional information about that specific subpopulation, it is impossible to know if we have a representative sample in our current study although the large size of the sample partly mitigates this limitation. Another limitation of our current study is that although it is international in scope, it is not a comprehensive representation of much of the world. The survey was provided so far in only a handful of languages and thus, we cannot say that the data is representative of other cultures, but only of the samples surveyed. Additionally, data in the current study were gathered without the ethnicity information of the participants. Obviously, effect of ADC on beliefs is a broad structure encompassing a number of different dimensions, possibly including ethnicity. As a result, the effects of ethnicity on belief and spirituality changes related to ADC could not have been addressed in this study. Again, more comprehensive data will need to be collected in order to promote a fuller representation of the human experiences of ADCs.

Future Research

What does appear to be evident is that the overwhelming reaction to having an ADC is positive. This is demonstrated in existing research literature and replicated in the current research. Previous research has demonstrated that sharing the ADC can be beneficial for the individual experiencing it (Streit-Horn, 2013). Thus, future research and clinical work in this area may benefit from focusing on the beneficial effects of *experiencing and sharing* ADCs (Roxburgh & Evenden, 2016a, 2016b). This would include adding research questions about participants' previous disclosures, as well as their thoughts and feelings regarding the ADC. Besides participant observation, future research may focus on the relationship of deceased with the participant, the severity of grief, subgroups who experience ADC during a traumatic grief period. Exploring these parameters would show us the intersection of experiencing ADC with factors related to the deceased, properties of the mourning process, and effect of post-traumatic growth. Additionally, information about the cultural acceptance of ADC would be of interest to collect and analyze. Training clinical professionals on how to ask about ADCs as well as how to listen with openness and acceptance in order

to help those who have ADCs accommodate their experiences is an additional area of future research (Amatuzio & Matthews, 2007; Hastings, 1983; Wooten-Green, 2001). The benefits of wider acknowledgement and improved understanding of this fairly prevalent and positive experience appears to be an important topic and thus a logical and helpful focus for future research.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

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