Schizophrenia Research 115 (2009) 379–380

Contents lists available at ScienceDirect

Schizophrenia Research

journal homepage: www.elsevier.com/locate/schres

Letter to the Editors

Emotion in the daily lives of schizophrenia patients: Context matters

Dear Editors,

Research has shown that people with schizophrea report experiencing similar levels of emotion compared to people without schizophrenia when presented with evocative stimuli (Kring and Moran, 2008). However, people with schizophrenia also report experiencing more negative emotion in response to putatively neutral or positive evocative stimuli (Cohen and Minor, 2008) and more trait negative emotion than healthy controls (Horan et al., 2008), highlighting the fact that emotions differ in daily life contexts where the ambiguity of events and stimuli are much greater. Experience sampling (ESM) studies have found that people with schizophrenia report being alone more often, more negative and slightly less positive emotion, and daily life stress is associated with negative emotion than people without schizophrenia (Myin-Germeys et al., 2003; 2001; 2000).

In the current study, we examined the linkage between specific environmental contexts and emotional experiences. People with schizophrenia or schizoaffective disorder ($n=15$) and healthy controls ($n=12$) reported on their emotion and environmental context several times a day over the course of a week (See Gard et al., 2007 for more on the samples). Participants responded to questions relating to their current emotional experience (30 emotion words) as well as their environmental context 7 times a day. Composite variables of emotion experience (valence and arousal) and environment context (*where* participants were; *who* participants were with; *what* participants were doing) were created to investigate the interaction of emotion experience and environment. Analyses were conducted using HLM (Bryk and Raudenbush, 1992). HLM treats the repeated observations gathered for each participant as Level 1 data (within-subjects) that are nested within individuals at Level 2 (between-subjects). Emotion ratings for a given participant and day were examined as function of both within-subject (Level 1) variables (i.e., environment) and between-subject (Level 2) variables (i.e., group).

Response rates were quite high for both groups (schizophrenia: 89.4%; SD = 6.6; controls: 86.4%; SD = 9.0), and groups did not differ from one another ($t(25)=.996$, *ns*). Consistent with laboratory studies, people with and without schizophrenia reported experiencing similar levels of positive and negative emotion over the course of the week. However, within context, differences between the two groups' emotional experience emerged (See Table 1). When not at a treatment facility, people with schizophrenia reported being alone more often ($t(25)=2.50$, $p<.05$). Yet, those with schizophrenia also felt negatively when they were alone ($\beta=-0.15$; SEM = .06; $t=2.62$, $p=.015$), and found being around others to be more

Table 1
Descriptive statistics: emotion in context.

Emotion variable										
	Pos		PA		A		NA		Neg	
	P	NP	P	NP	P	NP	P	NP	P	NP
Context										
"Where"										
Home	1.90(0.31)	1.77(0.43)^{a*}	1.70(0.28)	1.52 (0.41)	1.24(0.20)	0.83(0.29)	0.77(0.19)	0.44(0.22)	0.88(0.20)^{b*}	0.68(0.30)
Work/tx	1.95(0.11)	1.42(0.18)^{a*}	1.76(0.10)	1.57(0.17)	1.42(0.12)	1.23(0.18)	0.86(0.06)	0.61(0.12)	0.64(0.09)^{b*}	0.57(0.13)
"Who"										
Alone	1.88(0.32)	1.52(0.42)	1.65(0.28)	1.36(0.42)	1.39(0.23)	0.80(0.33)^{d**}	0.94(0.20)	0.66(0.26)	0.86(0.20)^{e*}	0.67(0.28)
Others	1.85(0.07)	1.78(0.16)	1.72(0.04)	1.66(0.15)	1.32(0.08)^{c**}	1.05(0.11)^{c,d**}	0.94(0.07)	0.58(0.10)	0.71(0.06)^{e*}	0.56(0.08)
Familiar	1.82(0.30)	1.94(0.43)^{f**}	1.69(0.28)^{g*}	1.76(0.42)	1.26(0.20)^{h*}	1.03(0.29)	0.92(0.19)	0.52(0.22)	0.72(0.20)	0.43(0.22)
Less fam.	1.89(0.10)	1.42(0.17)^{f**}	1.83(0.07)^{g*}	1.69(0.18)	1.48(0.10)^{h*}	1.26(0.18)	1.10(0.09)	0.75(0.17)	0.75(0.06)	0.35(0.10)
"What"										
Something	1.84(0.11)	1.72(0.16)	1.68(0.32)	1.60(0.44)^{i**}	1.33(0.27)	1.02(0.32)^{k**}	0.90(0.21)^{l**}	0.61(0.24)	0.70(0.06)	0.40(0.13)
Nothing	1.93(0.36)	1.61(0.47)	1.78(0.07)	1.29(0.13)^{i**}	1.42(0.11)^{j**}	0.64(0.13)^{k,j**}	1.09(0.06)^{l,m**}	0.50(0.12)^{m**}	0.78(0.21)	0.50(0.26)

Note: Tabled values are means; standard errors in parentheses. Superscript letters refer to differences between and within groups. *$p<.05$; **$p<.01$.
P = patients; NP = nonpatients; Pos = happy, glad, cheerful; PA = enthusiastic, lively, excited; A = active, intense, surprised; Neg = sluggish, bored, drowsy; NA = anxious, nervous, distressed; (Where = where participants were at the time of a page; Who = who participants were with at the time of a page; What = what participants were doing at the time. Differences compared using Hierarchical Linear Modeling.

0920-9964/$ – see front matter
doi:10.1016/j.schres.2009.07.017

arousing than controls ($\beta = .32$; SEM = .11; $t = 2.80$, $p < .01$). People with schizophrenia found social interactions with familiar others significantly less pleasant ($\beta = -0.15$; SEM = .06; $t = 2.62$, $p = .015$) than with people they knew less well; the opposite was true for controls ($\beta = -47$; SEM = .14; $t = 3.46$, $p = .002$). Thus, people with schizophrenia may accept the "emotional cost" of being alone (i.e., boredom) or with familiar others rather than negotiating the arousing feelings they have when they are around others.

Controls found daily activities to be pleasant ($\beta = 0.31$; SEM = 0.11; $t = 2.90$, $p < .01$), whereas people with schizophrenia did not. This suggests that people with schizophrenia are not getting a boost from putatively pleasurable activities, which is consistent with findings of anhedonia among people with schizophrenia.

Findings from this naturalistic study are largely consistent with laboratory studies that have found few differences in reported emotion between people with and without schizophrenia. However, examination of emotion in the context of daily life reveals a richer picture of the emotional lives of people with schizophrenia. These findings are especially useful for intervention strategies that seek to target negative symptoms (e.g., Beck and Rector, 2005). For example, it appears important to note the emotional costs of being alone, while being mindful of possible heightened arousal in social interactions for people with schizophrenia.

Role of funding source

This study was funded, in part, from funding from National Alliance for Research on Schizophrenia and Depression (NARSAD). NARSAD had no further role in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the paper for publication.

Contributors

This study was designed and data were collected by Ann Kring and David Gard. Ann Kring wrote the first draft of the manuscript, and both authors undertook the statistical analyses as well as the subsequent drafts of the manuscript. Both authors contributed to and have approved the final manuscript.

Conflicts of interest

Both authors declare that they have no conflicts of interest.

Acknowledgements

This work was supported in part by a grant from the National Alliance for Research on Schizophrenia and Depression (NARSAD) awarded to the second author. We thank Marja Germans Gard, Neera Mehta, and Laila Ansari for their help with various aspects of the project.

Portions of this research were presented at the annual meeting of the Society for Research in Psychopathology in October, 2000 in Boulder, Colorado.

References

Beck, A.T., Rector, N.A., 2005. Cognitive approaches to schizophrenia: theory and therapy. Annual Review of Clinical Psychology 11, 577–606.

Bryk, A.S., Raudenbush, S.W., 1992. Hierarchical Linear Models: Applications and Data Analysis Methods. Sage Publications Inc, Thousand Oaks, CA.

Cohen, A.S., Minor, K.S., 2008. Emotional experience in patients with schizophrenia revisited: meta-analysis of laboratory studies. Schizophrenia Bulletin.

Gard, D.E., Kring, A.M., Germans Gard, M., Horan, W.P., Green, M.F., 2007. Anhedonia in schizophrenia: distinctions between anticipatory and consummatory pleasure. Schizophrenia Research 93, 253–260.

Horan, W.P., Blanchard, J.J., Clark, L.A., Green, M.F., 2008. Affective traits in schizophrenia and schizotypy. Schizophrenia Bulletin 34, 856–874.

Kring, A.M., Moran, E.K., 2008. Emotional response deficits in schizophrenia: insights from affective science. Schizophrenia Bulletin 34, 819–834.

Myin-Germeys, I., Delespaul, P.A.E.G., deVries, M.W., 2000. Schizophrenia patients are more emotionally active than is assumed based on their behavior. Schizophrenia Bulletin 26, 847–854.

Myin-Germeys, I., Peeters, F., Havermans, R., Nicolson, N.A., deVries, M.W., Delespaul, P.A.E.G., van Os, J., 2003. Emotional reactivity to daily life stress in psychosis and affective disorder: an experience sampling study. Acta Psychiatrica Scandinavia 107, 124–131.

Myin-Germeys, I., van Os, J., Schwartz, J.E., Stone, A.A., Delespaul, P.A.E.G., 2001. Emotional reactivity to daily life stress in psychosis. Archives of General Psychiatry 58, 1137–1144.

David E. Gard
Department of Psychology, San Francisco State University, 1600 Holloway Avenue, San Francisco, CA, 94132-4168, United States
Corresponding author. Tel.: +1 415 338 1440; fax: +1 415 338 2398.
E-mail address: dgard@sfsu.edu.

Ann M. Kring
Department of Psychology, University of California at Berkeley, 3210 Tolman Hall, UC Berkeley, Berkeley, CA 94720-1650, United States
E-mail address: akring@berkeley.edu.

27 May 2009