



Looking at facial expressions: Dysphoria and facial EMG

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Abstract

Previous research on interpersonal deficits among dysphoric individuals has been equivocal, with some studies finding that dysphoric persons show an increase in negative behavior and other studies finding no group differences. Most studies in this area have employed self-report instruments and behavioral coding systems to examine interpersonal displays. Using a different approach, we examined facial electromyography (EMG) reactivity to pictures of happy and unhappy expressions among dysphoric persons. Dysphoric and non-dysphoric persons viewed happy and unhappy facial expressions while zygomatic EMG and corrugator EMG activity was recorded. Results indicated that both groups showed the appropriate increase in corrugator EMG to unhappy expressions; however, dysphoric persons did not show the expected increase in zygomatic EMG activity to happy expressions while the control participants did show this response. Unexpectedly, the dysphoric group displayed an increase in corrugator EMG activity (e.g. frown response) to the happy facial expressions. These findings indicate that dysphoric persons have impaired interpersonal reactivity that is specific to happy facial displays. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

Imagine you are at a party telling a new acquaintance a story you believe is amusing. As the story progresses, the person remains stone-faced, seemingly unamused, making you uncomfortable. As a result, you terminate the interaction as quickly as possible. Most people learn early in life that a socially appropriate response is to show amusement when someone is telling an amusing story, even if the listener does not find the story amusing. Displaying an inappropriate social response, such as no response, could lead a person to become socially alienated.

Inappropriate social responses have been noted to occur among individuals high in depressive symptomatology, also referred to as dysphoria or depressed mood (Kendall et al., 1987). For the purpose of clarity we will use the term dysphoric to describe persons high in depressive symptomatology. Several inappropriate social responses have been observed among dysphoric person. For instance, during social interactions, dysphoric persons display both nonverbal (e.g. holding head down, poor eye contact, few gestures) and verbal (e.g. long pauses, inappropriate self-disclosures, few utterances) signs of poor social interaction skills (for a review see, Segrin, 2000). Given these behavioral deficits it is not surprising that dysphoric individuals both rate themselves, and are judged by objective observers to be less socially competent than others (e.g. Dykman et al., 1991; Lewinsohn et al., 1980; Segrin, 1993).

Deficits in interpersonal behavior can have a detrimental effect on social relationships and may result in others minimizing interactions with, and perhaps even rejecting, a dysphoric person (Segrin, 2000). Indeed, there is a substantial body of evidence indicating that dysphoric individuals have poor interpersonal relationships and are frequently rejected by others (e.g. Coyne, 1976; Gotlib and Beatty, 1985; Alloy et al., 1998).

A number of studies examining interpersonal behaviors in dysphoria have focused on either self-report of interpersonal behaviors (Cole et al., 1987; Lewinsohn et al., 1980; Segrin and Dillard, 1993) or have used a behavioral approach to study these behaviors, such as assessing eye contact, verbal comments, and body gestures (Andersen and Bowman, 1990; Dow and Craighead, 1987; Fossi et al., 1984; Gaebel and Woelwer, 1992; Gotlib, 1982). Though social skills deficits in dysphoria appear to be widespread, a meta-analysis of the literature indicated that these deficits are most evident when measured with self-report instruments (Segrin and Dillard, 1993). In contrast, the deficits appear to be less consistent when using observer ratings.

These equivocal findings may be due to the fact that dysphoric individuals tend to negatively evaluate their social skills, even in the absence of objective information (Segrin, 2000). Alternatively, the faulty interpersonal responses may be too subtle to be reliably detected using a behavioral approach, which usually involves videotaping social responses and later quantifying the responses using a coding system. This approach can be problematic because the behavioral coding systems may not be those behaviors that are most critical to the social interaction. Further, social interactions consist of capturing nuanced behaviors (e.g. slight curve of the lip, subtle

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