Erratum: Some $_3\psi_3$ transformations formulas related to Bailey's $_2\psi_2$ [ARS Comb. 78, 257-265 (2006)]

Zhizheng Zhang
Department of Mathematics, Luoyang Teachers' College,
Luoyang, 471022, P. R. China
e-mail: zhzhzhang-yang@163.com

In a recent paper entitled "Some $_3\psi_3$ transformations formulas related to Bailey's $_2\psi_2$" [ARS Comb. 78, 257-265 (2006)], the results derived in the paper are failure.

For example, the $e = b$ case of the $_3\psi_3$ transformation in Theorems 2.1 leads to zero on the right-hand side. However, specializing the left-hand side further by $d = q$ a $_2\phi_1$ sum is obtained which can be summed by the q-Gauss summation leading to a result unequal to zero - a contradiction. Hence Theorem 2.4 is also false . Similarly, the $e = b$ case of the $_3\psi_3$ transformation in Theorem 2.2 leads to zero on the right-hand side. The further reasoning is similar as in the above case of Theorem 1.1. Further, the $z = q/a$ and $e = bq$ case of Theorem 2.5 leads to a $_3\psi_3$ summation (as in this case the $_3\psi_3$ series on the right-hand side reduces to 1). Specializing this further by $d = b$ leads to a $_2\psi_2$ series evaluating to zero. However, the $b = 1$ case is a $_1\phi_0$ summation which evaluates by the q-binomial theorem to a nonzero expression - a contradiction.

Finally, the $c = b$ case of Theorem 2.6 gives zero on the right-hand side and a $_2\psi_2$ series on the left-hand side. Specializing this further by $b = 1$ a $_2\phi_1$ series is obtained which can be evaluated by the q-Gauss sum. The result is non-zero - again a contradiction.

As a matter of fact, the application of q-exponential method was not correct. In particular, the *termwise* application of the operator to the summands of the series was not justified.

The author thanks Professor Michael Schlosser for informing me of the errors.